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ABSTRACT

A study examined coordination between public vocational education and programs conducted under the Job Training Partnership Act (JTPA). The study entailed two years of extensive data collection at the state and local levels. In addition to the inherent structural barriers to coordination between vocational education and JTPA, the study uncovered other barriers to coordination that were related to potential threats to agencies' autonomy, resources, basic identity, and public image. Both JTPA and vocational education officials appeared to fear that serving too many hard-to-employ clients would weaken their credibility as effective job preparation agencies. The study also included many analyses attempting to construct a structural model of coordination. No significant relationships among the state and local variables could be found, however. Nor was it possible to combine the variables into a structural model with acceptable parameters. The data collected were, however, sufficient to formulate a set of tentative guidelines for initiating and improving coordination. It was determined that someone must take the lead in coordination, there must be mutual benefit for the cooperating parties, mutual accommodation is almost always necessary, and communication is the most important element in any coordination effort. (The appendix, entitled "Attempts at a Statistical Model of Coordination," includes a causal model, the survey instruments, information on structural equation modeling, and the results of testing the structural equation.) (MN)

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EXAMINING VOCATIONAL EDUCATION-JOB TRAINING PARTNERSHIP ACT COORDINATION

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CONTENTS

LIST OF TABLES AND FIGURES v

FOREWORD vii

EXECUTIVE SUMMARY ix

CHAPTER 1. EXAMINING THE CONCEPT 1

Defining Coordination 2
The Problem Domain 5

CHAPTER 2. RECENT COORDINATION INITIATIVES 13

Expanding Responsibilities 13
Welfare Reforms 18
Focus on Targeted Groups 20

CHAPTER 3. COORDINATION GUIDELINES 27

APPENDIX ATTEMPTS TOWARD A STATISTICAL MODEL OF COORDINATION 33

A Causal Model 33
Instruments 35
Structural Equation Modeling 41
Results of Testing the Structural Equation 44

REFERENCES 53

LIST OF TABLES AND FIGURES

Tables

1. EFFECTIVE INTERAGENCY COORDINATION AS SEEN BY AGENCY DIRECTORS AND COUNCIL CHAIRPERSONS . . . 4

2. MEANS AND STANDARD DEVIATIONS OF VARIABLES USED AS INDICATORS IN THE STRUCTURAL EQUATION MODEL OF VOCATIONAL EDUCATION-JTPA COORDINATION PROCESS 45

3. PEARSON PRODUCT-MOMENT CORRELATION AMONG STATE-LEVEL VARIABLES USED IN THE STRUCTURAL EQUATION MODEL OF VOCATIONAL EDUCATION-JTPA COORDINATION PROCESS 47

4. PEARSON PRODUCT-MOMENT CORRELATION AMONG LOCAL-LEVEL VARIABLES USED IN THE STRUCTURAL EQUATION MODEL OF VOCATIONAL EDUCATION-JTPA COORDINATION PROCESS 48

5. PEARSON PRODUCT-MOMENT CORRELATIONS OF ACROSS-LEVEL VARIABLES USED IN THE STRUCTURAL EQUATION MODEL OF VOCATIONAL EDUCATION-JTPA COORDINATION PROCESS 49

6. INITIAL PARAMETER ESTIMATES FOR THE STRUCTURAL EQUATION MODEL OF THE VOCATIONAL EDUCATION-JTPA COORDINATION PROCESS COMPUTED BY THE LISREL VI PROGRAM 51

Figures

1. Schematic of problem domain and main public agencies involved in the domain 6

2. Hypothesized model of the vocational education and JTPA coordination process 34

3. A complete structural equation model of the vocational education-JTPA coordination process . . 43

FOREWORD

This report examines what is meant by coordination between public vocational education and programs conducted under the Job Training Partnership Act (JTPA). The report draws upon previous studies conducted by the National Center for Research in Vocational Education at The Ohio State University and current examples of coordination initiatives that have received national visibility. The information the report contains should be of use to those concerned with coordinating the service of public agencies.

This report was produced in the Applied Research and Development Division of the National Center. Morgan Lewis, Research Scientist, served as project director. Belle Chen, Graduate Research Associate, conducted the statistical analysis of existing data on coordination. Monyeene Elliott served as project secretary. External reviews of a preliminary draft were provided by Charles Radcliffe, legislative consultant, and Audrey Theiss, Maryland Department of Economic and Employment Development. Internal reviews were conducted by Ernest Fields, Research Specialist, and Kevin Hollenbeck, Senior Research Specialist. Funds for the preparation of the report were provided under a grant from the Office of Vocational and Adult Education, U.S. Department of Education.

On behalf of the National Center at Ohio State I wish to express our appreciation to all those who assisted in the preparation of this report. It is our hope that it will contribute to more effective and efficient delivery of services by public agencies.

Ray D. Ryan
Executive Director
National Center for Research
in Vocational Education
The Ohio State University

EXECUTIVE SUMMARY

This report examines coordination between public vocational education and programs conducted under the Job Training Partnership Act (JTPA). It presents a perspective developed during two years of study of this relationship that included extensive data collection at the state and local levels. Part of the report presents a reanalysis of that data. The greater part of the report, however, is an attempt to describe just what is meant by coordination of public agencies and to identify the factors that determine the degree to which different agencies work together.

The following definition of coordination is proposed:

> Actions designed to achieve common objectives and intended to improve services or prevent duplication that are taken with the joint knowledge of the parties in a relationship.

This definition indicates that while communication is essential to coordination, the parties in a relationship must do more than simply communicate. They must take some action to achieve their common objectives that goes beyond what either of them would do alone. It is not necessary, however, that their common objectives be jointly determined. If two or more parties work together to achieve objectives that each of them have set independently, their actions could be considered coordination. The crucial criterion in such a case would be whether the parties do anything differently than they would have if they were acting alone.

This definition is used to consider whether purchase of services by one agency from another qualifies as coordination. It is concluded that by most of the components of the definition purchase of service is a form of coordination. It is certainly an action taken with the joint knowledge of the parties and is typically intended to prevent duplication by using an existing service. The question arises usually over whether there are common objectives. In the case of vocational education and JTPA, the most common relationship is the purchase of training services. From the JTPA perspective providing training is a means to the main objective of placing its clients in jobs. One of the most common complaints of JTPA representatives is that for many vocational educators the training itself is the primary objective, job placement is too often considered someone else's responsibility.

The Problem Domain

To examine the influences that act to facilitate or constrain coordination the concept of a problem domain labeled "barriers to employment" is used. A problem domain is defined "as a set of

actors (individuals, groups, and/or organizations) that become joined by a common problem or interest" (Gray 1985, p. 912). JTPA agencies appear to operate entirely within this problem domain. Public vocational education is a major actor within the domain, but by far the majority of the topics and problems that are of concern to its administrators do not involve barriers to employment. To the degree nondomain concerns require the attention and resources of these administrators, they are less able to deal with the problems that are the sole focus of JTPA officials.

In addition to these inherent structural constraints, coordination carries with it potential threats to the autonomy and resources of any agency. Even more basic than these immediate concerns is the threat to the basic identity and public perceptions of an agency. Vocational educators do not want their programs to be too closely identified with service to economically disadvantaged individuals, just as JTPA officials do not want their programs to be too closely identified with service to welfare recipients. In both cases these officials fear that serving "too many" hard-to-employ clients will weaken their credibility as effective job preparation agencies.

With the number of factors that act as barriers to coordination, it is fortunate that there are some conditions within the problem domain that facilitate the process. One is the nature of the domain, itself. A problem domain, by definition, involves the interaction of agencies with regard to problems whose scope or complexity exceed the capacity of any one agency to deal with alone. When agencies do not have sufficient resources or expertise to deal with all the problems they encounter, they are more likely to anticipate benefits from working with other agencies. If the agencies share similar perceptions concerning the problems faced by the individuals to be served and how these problems can best be dealt with, coordination is more likely to occur.

The evidence collected for the two annual reports on vocational education-JTPA coordination (Lewis, Ferguson, and Card 1987; Lewis 1988) indicates that most of these facilitating conditions do exist. Despite some disagreement over the relative value of on-the-job versus classroom training, there is high usage of public vocational training by JTPA agencies. During the 1985 program year, for example, over half of all JTPA clients assigned to classroom training received that training from public institutions.

In addition to the evidence from the two reports, there are many recent initiatives at the state and local levels that reflect a heightened awareness of the need to coordinate efforts to prepare people for employment. Some of these initiatives have involved expanding the responsibilities of an existing agency or council to give it a broader functional role or coordination

oversight for state programs involved in preparing people for employment. North Dakota, Florida, Indiana, and Massachusetts have taken actions to align and in some cases even combine responsibility for administration of Employment Service and JTPA programs. Maine, Massachusetts, and New Jersey have expanded their job training coordinating councils and charged them to advise on all aspects of employment and training programs.

In some states, most notably California and Massachusetts, welfare reform programs have provided a strong stimulus for increased coordination across education, employment and training, and human service agencies. A national consensus, reflected in the Family Support Act of 1988 (P.L. 100-998), appears to have emerged that welfare recipients who are capable of working should be provided a broad range of services to increase their chances of obtaining employment. As this legislation begins to be implemented nationally, all states will be seeking methods to plan and deliver services that draw upon the resources of several agencies.

The needs of specific, targeted groups have served as focal points that have brought different agencies together. New York and Illinois combined funds from education and welfare to conduct programs for single, teenage parents at selected locations in each state. New Jersey's Department of Human Services established the School Based Youth Services Program to encourage schools and other community agencies to offer a jointly sponsored range of services to teenagers. Mississippi used JTPA title IIB funds to contract with the state Department of Education to offer summer remediation to young people who had failed the state's Functional Literacy Test. These state-level initiatives, as well as several local cooperative projects which are described, reflect the range of coordinated activities being carried out at various locations throughout the nation.

A Structural Model of Coordination

As part of the project that produced this report, many analyses were conducted to attempt to construct a structural model of coordination. The model used the data from the state and local-level surveys carried out for the first two annual reports of vocational education-JTPA coordination. These analyses indicated that there were some significant intercorrelations among state-level variables derived from several separate sources. There also were significant local-level relationships. There were, however, essentially no relationships among the state and local variables. Nor was it possible to combine the variables, using the LISREL VI computer program, into a structural model with acceptable parameters.

Suggested Guidelines

On the basis of the evidence reviewed in this report, a set of guidelines for initiating or improving coordination are suggested. These guidelines represent what appear to be the best practices reflected in the evidence reported, but should be regarded as working hypotheses rather than established principles:

(1) Someone must take the lead.

(2) There must be mutual benefit for the cooperating parties.

(3) Mutual accommodation is almost always necessary.

(4) To the extent possible, all those to be involved in coordinated activities should participate in planning the activities.

(5) Communicate, communicate, communicate.

(6) Fulfill commitments.

CHAPTER 1

EXAMINING THE CONCEPT

There is no concept related to the delivery of public services that is held in higher regard than coordination. Policy makers, administrators, clients of public agencies, and the general public all endorse better coordination. It appears to promise many benefits: lower costs, less duplication, better services, increased access, and less bureaucratic "runaround." In recent years calls to increase coordination have become more frequent and mechanisms to require interagency contact have been increasingly incorporated in federal and state laws.

When the Carl Perkins Vocational Education Act was passed in October 1984, Congress included 22 specific references to the Job Training Partnership Act (JTPA). All of these references were intended to encourage joint planning and coordination of programs assisted by the two acts. JTPA, which had been enacted two years earlier, requires that 8 percent of a state's title IIA allotment be used to provide services and facilitate coordination under cooperative agreements with "any state education agency responsible for education and training." The welfare reform legislation passed in October 1988, the Family Support Act of 1988 (P.L. 100-998), has several provisions calling for coordination with education and employment and training at both the federal and state levels.

One of the provisions in the Perkins Act is for the National Center for Research in Vocational Education to "report annually to the Congress, the Secretary of Education, and the Secretary of Labor on the extent, efficiency, and effectiveness of joint planning and coordination under this Act and the JTPA" [section 404 (b) (8)]. The National Center at The Ohio State University prepared the first two annual reports mandated by the Perkins Act. The first report was based on mail and telephone surveys of 41 states and site visits to 9 states and 26 JTPA Service Delivery Areas (SDAs) (Lewis, Ferguson, and Card 1987). The second report was based on telephone surveys of all SDAs in the 50 states and the District of Columbia, and a mail survey of a representative national sample of postsecondary institutions (Lewis 1988).

For this report the data from those several surveys were reanalyzed in a formal structural model of coordination. This model attempted to determine if there were systematic relationships in the data that were associated with a high level of coordination measured both attitudinally and objectively. The results of this analysis are presented in the appendix.

This chapter discusses the concept of coordination. A definition is proposed and used to examine if purchase of service by one agency from another constitutes coordination. Data are presented on the way in which officials responsible for administering

the Perkins Act and JTPA. Coordination is conceived of as occurring within a problem domain labeled "barriers to employment." The extent to which public agencies operate within or outside this domain may create constraints to coordination. The nature and magnitude of the problems which the agencies confront, however, can also act to facilitate joint efforts. The nature of these constraining and facilitating conditions are discussed as well as whether the JTPA system constitutes a dual delivery system to the traditional vocational education system.

Chapter 2 presents several examples of current coordination initiatives at the state and local level. Chapter 3 draws upon these examples to propose guidelines for initiating or improving coordination.

Defining Coordination

In the initial planning for the coordination studies, the following definition of coordination was adopted:

> Actions designed to achieve common objectives and intended to improve services or prevent duplication that are taken with the joint knowledge of the parties in a relationship (Lewis and Hickey 1986).

All the words in the definition were carefully chosen, and the reasons for using them warrant explanation:

Actions--this word indicated that actual steps have been taken: meetings held, memoranda sent, agreements signed, clients referred, funds transferred, staff relocated and so forth.

Designed to achieve--these words are proposed to indicate that the focus is on coordination not on the effectiveness of programs. If the actions taken by or between two parties are intended to achieve their common objectives, they qualify as coordinated if both parties are informed of the actions. It is not necessary to determine if the action actually achieves the desired objective.

Common objectives--these words imply the shared or mutual benefit that most research has established as essential to coordination. They are not meant to imply that the objectives are jointly determined. If, for example, a post-secondary institution and a Private Industry Council (PIC) have a common objective of retraining dislocated workers, it is not necessary that they arrived at the objective through a consultative process.

Intended to improve services or prevent duplication--this phrase implies that the parties in a relationship acknowledge that it may be necessary to modify their own programs to achieve the common objectives.

Joint knowledge of the parties in a relationship--this phrase indicates that communication is essential among the parties in a relationship if there is to be coordination. There may be as few as two parties or several. The word "all" was purposely not included. A PIC could be involved in several relationships with different vocational institutions in its SDA. For these relationships to be considered coordinated, it is only necessary that each of the vocational institutions be aware of its relationship with the PIC. It is not necessary that each of the institutions be aware of all of the other relationships.

This definition appears to capture most of the main elements of coordination. Some scholars of interorganizational relations make a distinction between cooperation and coordination based on the goals to be achieved (Rogers and Whetten 1982). If agencies work together to help each other achieve their separate goals, their relationship is considered cooperation. Only if the goals are shared, and the agencies work together to achieve them, is the relationship considered coordination. Often, however, this distinction becomes very difficult to make.

The most frequent type of relationship between vocational education and JTPA is the purchase of training service by JTPA for its clients. Is this cooperation or coordination? The purchase is always preceded by some type of communication. The use of available services, rather than creating a new program is intended to avoid duplication. The JTPA agency and the vocational institution appear to have a shared objective: the enhancement of the occupational skills of the client. JTPA representatives sometimes complain, however, that providing the training itself, not job placement, is the primary objective of vocational educators (Lewis 1988). If there are shared objectives and if the training institutions make modifications in their curricula or provide special support services or remediation to assist JTPA clients, the criteria of coordination set forth in the proposed definition are met.

As part of the surveys for the first annual report produced by the National Center, interviews were conducted with the directors of the state agencies that administer the Perkins Act and JTPA and with the chairs of the state councils mandated by these acts. These respondents were specifically asked what interagency coordination meant to them. Their answers were grouped into the categories shown in table 1. Most respondents referred to more than one factor, consequently the categories exceed 100 percent.

TABLE 1

EFFECTIVE INTERAGENCY COORDINATION AS SEEN BY AGENCY DIRECTORS AND COUNCIL CHAIRPERSONS

Factors Reported	Percentage Mentioning Factor Listed			
	Agency Directors		Council Chairs	
	VE	JTPA	VE	JTPA
Joint activities				
Planning	47	20	34	23
Funding	22	20	6	2
Economic development	18	6	9	5
Service delivery	14	12	9	11
Other	14	12	11	11
Communications				
Inform each other	29	20	43	36
Cross-membership on councils, committees	18	14	11	11
Clear understanding of each other's roles, responsibilities	16	20	20	11
Other	6	8	0	0
Institutional policies				
Set common goals	20	16	13	23
Use existing facilities	16	16	20	14
Commitment to work together	10	8	22	25
Effective use of resources	0	0	15	7
Other	8	12	0	2
Linkage procedures	10	6	9	7
Base for percentages	49	50	46	44

NOTES: Percentages are based on number responding to survey. Totals exceed 100 because multiple answers were received.

All individual responses in the "other" category totaled less than 10 percent.

The categories in the table cover the range of relationships from information sharing to jointly planned and funded projects. Despite differences in percentages to specific categories, the overall patterns were similar for all four groups of respondents. It should be noted that these results reflect a census of the populations of interest, minus a few who could not be contacted or where the position was vacant. The responses grouped into the linkage category were such things as cooperative agreements, cross-referral of clients, and shared facilities.

It is clear from the results in table 1 that the chief administrators and policy advisors responsible for implementing JTPA and the Perkins Act take a very broad view of coordination. The next section examines the environment in which coordination occurs through the use of the concept of a problem domain labeled "barriers to employment."

The Problem Domain

The concept of problem domain is taken from Trist (1983) as elaborated by Gray (1985). Gray defines a domain "as the set of actors (individuals, groups and/or organizations) that become joined by a common problem or interest" (p. 912). Figure 1 is a graphic attempt to depict some of the relationships among the public agencies that operate in the problem domain of barriers to employment. Barriers to employment include individual characteristics, such as poor communication skills and physical handicaps, as well as environmental conditions, such as living in an area with few job opportunities or inadequate transportation facilities. The shapes that represent the agencies are very rough attempt to reflect their extent of involvement in the domain and their relationships with each other. The size of the shapes roughly reflects the overall size of the agencies, as reflected by 1984 expenditures (U.S. Bureau of the Census 1986), but they are not to scale. If an attempt were made to draw them to scale, the shape for education would be one hundred times the size of the shape for vocational rehabilitation and 50 times the size of JTPA. In general, the sizes of the shapes tend to overrepresent the smaller agencies and underrepresent the larger ones. Also, due to the limitations of a two dimensional figure, not all interrelationships can be shown.

By their position totally within the problem domain, JTPA, vocational rehabilitation, and developmental disabilities are shown to be completely involved in services to those with barriers to employment. Public education, in contrast, serves many people who have difficulty obtaining employment, but the great majority of its students do not fit this definition. Similarly, welfare is heavily involved in employment problems, but also serves large populations of the young and elderly who are not part of the labor force.

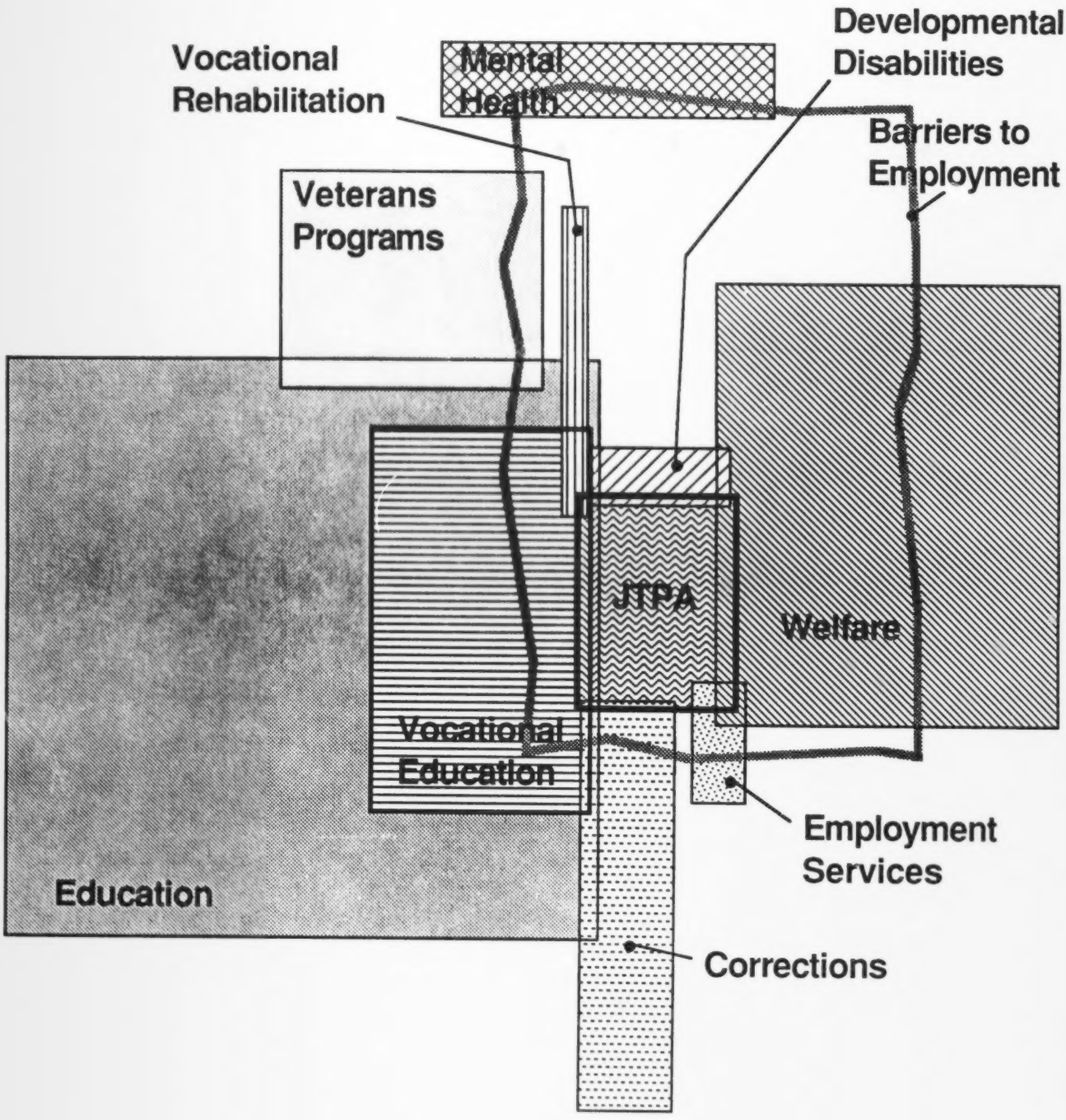

Figure 1. Schematic of problem domain and main public agencies involved in the domain.

The positioning of JTPA shows its contacts with many other agencies serving individuals with barriers to employment. Four out of every ten JTPA clients are also welfare recipients (U.S. Department of Labor 1988). As noted in the review of current coordination initiatives, JTPA has strong links with the Employment Service. In many states JTPA services are made available to convicted offenders living in community pre-release centers, and in all states these services are available to paroled offenders. Note that JTPA has relationships with the broader education enterprise as well as with vocational education.

Through its governance and administrative structure, public vocational education is totally within public education. Figure 1 reflects that vocational education serves some individuals with barriers to employment independent of other agencies. It also enrolls clients of other agencies including JTPA, vocational rehabilitation, developmental disabilities, and corrections.

A Parallel System?

The central position of JTPA in the figure and its overlap with several different agencies is not, of course, by chance. It was dictated by the nature of JTPA's purpose and activities. It is common for scholars of employment and training to refer to that system as dual or parallel to the regular vocational-technical system. Charles Radcliffe specifically rejects the concept of a dual system. Radcliffe served as counsel to the Education and Labor Committee of the U.S. House of Representatives and participated in writing all the federal employment and training and vocational education legislation from the Manpower Development and Training Act of 1963 through the Job Training Partnership Act of 1982.

The differences between these two positions are clearly stated in the Design Papers that were prepared as part of the planning for the National Assessment of Vocational Education (undated) mandated by the Perkins Act. A paper by Peterson and Rabe titled "Coordination of Vocational Education and Manpower Training Program" begins with the statement:

> Two separate systems of federally supported occupational training have emerged in the United States. On the one side, traditional vocational education is offered by the public schools and by junior and community colleges. It is financed largely through state and local funds,it has slowly developed over many decades primarily in response to local political and economic pressures, and it offers a range of instruction to a wide variety of social and ethnic groups.
>
> On the other side, manpower training programs initiated in the sixties and currently funded by the Job Training Partnership Act (JTPA) are relatively new institutions

> dependent on federal financing, closely guided by explicit federal policies, and largely distinct from the public schools (p. IV-28).

Radcliffe responded to this paper and others presented at the planning conference. He sees JTPA playing quite a different role:

> I've heard JTPA described as a parallel delivery system. I think that really is wrong. It is not a training delivery system at all. Vocational-technical eduction delivers training. The MDTA-CETA-JTPA system is really a brokerage system that does not deliver training but arranges for it through a variety of sources, the main one being public vocational-technical education (p. VI-44).

The state and local-level data collected for the National Center's first and second annual reports on joint planning and coordination support Radcliffe's position. Estimates presented in the second report indicated that over half of all JTPA clients assigned to classroom training received that training from public vocational-technical institutions. Most of this training was delivered in regular classes to which JTPA clients were referred on an individual basis. Special classes established only for JTPA clients were far less common. Site visits to 26 SDAs encountered very few training programs set up by SDAs independent of public institutions. In several cases, even when public training institutions were not the recipients of JTPA contracts, the institutions' facilities and/or instructors were used to provide training. The contract recipients, often community-based organizations, reimbursed the institutions for the use of their facilities or paid the instructors directly.

Inherent Constraints

The extent to which the shapes in figure 1 that represent the agencies lie outside the problem domain represents the extent to which potential barriers to coordination exist. The amount of each agency shape that is outside the domain reflects the degree to which its policy makers and chief administrators are likely to be concerned with topics and problems that do not involve barriers to employment. To the degree nondomain concerns require the attention and resources of these officials, they are less able to deal with barriers to employment and with the other agencies in this domain.

As is obvious from figure 1, the greater portion of education is outside the problem domain. Public education, of which vocational education is a part, is a vast enterprise. It is operated primarily at the local level under laws and regulations established at the state level. During the 1985-86 school year, public education at all levels spent $219 billion of which almost half

(48 percent) came from state and about one-third (31 percent) from local sources. The federal government's share was 8 percent and all other sources provided the remaining 13 percent (Snyder 1988, p. 31). Over two-thirds of these funds are used by approximately 16,000 public school districts in the country that operate over 23,000 secondary schools. At the postsecondary level there are 1,900 public institutions that offer occupational programs.

When these figures are compared to the 630 JTPA service delivery areas (SDAs) in the United States, they indicate that the average SDA includes 25 school districts, 37 secondary schools, and 3 postsecondary institutions. The enormity of the task of trying to use some of the limited funds available under titles IIA and IIB of JTPA to leverage the huge and diverse educational system is apparent. Yet, to a considerable degree, that is one of the responsibilities assigned to JTPA agencies, and especially to the state job training coordinating council, by the act. Section 122 specifically directs the coordinating council to work with appropriate state agencies to identify needs and assess "the extent to which employment and training, vocational education, rehabilitation services, public assistance, economic development, and other federal, state, and local programs and services represent a consistent, integrated, and coordinated approach to meeting such needs. . . ." At the local level private industry councils are to include representatives of many of these same service agencies to ensure JTPA supported activities are coordinated with the regular services of these agencies.

All of those other agencies, of course, have their own systems of funding, governance, and administration. As much as they may recognize and support the need for coordination, they are cautious about committing funds or delegating responsibilities for which they are accountable. Furthermore, the policies and procedures of many agencies are influenced most heavily by situations and problems not directly related to overcoming barriers to employment. This appears to be the source of the criticism that public education is not responsive to the needs of JTPA clients and members of other population groups with special needs.

In addition to this inherent structural constraint, coordination carries with it potential threats to any agency. The most immediate threat is the loss of some decision-making autonomy and resources. Even to enter negotiations concerning possible coordination requires the investment of staff time. To reach an agreement, mutual accommodation is usually necessary, and this requires change in established procedures and some type of exchange of resources.

More basic than these immediate concerns, is a possible threat relating to the basic identity and public perceptions of any agency that could arise from coordination. Compare the following two quotations. The first comes from a study of the

effects of JTPA performance standards on service to AFDC recipients:

> Our respondents cited several factors contributing to the lack of coordination between JTPA and Welfare. One centered on existing differences in target group focus. While welfare departments are targeted exclusively on the AFDC population, the JTPA program is more broadly targeted on all disadvantaged individuals, and must structure its services to meet the needs of a wide-ranging population. To the extent that JTPA increasingly targets on AFDC recipients, it runs the risk of losing key elements of its community support and constituency. (Rubin and Zornitsky 1988, pp. 35-36)

The second paragraph is from the National Center's first annual report on joint planning and coordination between vocational education and JTPA:

> Those who administer vocational education believe that if it is to remain a mainstream institution, it must serve the majority of individuals who are not disadvantaged as well as direct special services to those with the most difficult problems. Vocational educators believe they have developed programs that serve all segments of society. . . . (Lewis, Ferguson, and Card 1987)

Both of these quotations demonstrate the concern of officials from one agency about being too closely identified with the mission of another agency: JTPA officials do not want to become known as a welfare program; vocational educators do not want to become known as a program for the disadvantaged. Both vocational educators and JTPA administrators seem to fear that serving "too many" hard-to-employ individuals would weaken their credibility as effective job preparation agencies. If an agency comes to be seen as serving those with the most problems, it could be harder to attract clients who are more "job-ready," and employers may be reluctant to hire those who complete its programs. It is ironic that the concerns of vocational educators about serving the disadvantaged are echoed by JTPA officials with regard to welfare recipients.

Coordination, therefore, is not something that just happens. The late Henry David, who directed the first national assessment of vocational education, used to describe coordination as "an unnatural act performed by nonconsenting adults." Such a characterization, while exaggerated for humor, indicates that some intervention--incentive, persuasion, or sanction--will be necessary to overcome the constraints that operate naturally in an interagency environment. Fortunately, there are also factors operating in such an environment that encourage coordination. It is to a review of these conditions that the discussion now turns.

Facilitating Conditions

By definition, a problem domain involves the interaction of problems whose scope or complexity exceed the capacity of any one agency (Gray 1985). This produces the condition referred to in the theoretical literature as "resource scarcity" or "resource interdependence" (Schermerhorn 1975, Van de Ven 1976).

The variety of problems grouped under the term "barriers to employment" cut across many different agencies. Educational institutions do not have the resources to deal with the housing, transportation, health care, and day care needs of individuals living in poverty. Welfare agencies do not conduct the remedial education and skill training courses that many of their clients need to obtain employment. Education and welfare rarely provide the extra support and transition services that handicapped or discouraged job seekers need to be successful in their job search. Providing such services falls to agencies such as JTPA and vocational rehabilitation. Clearly this is a problem domain with a great deal of resource interdependence.

Shared perceptions concerning the problems faced by the individuals to be served, their needs, and the best ways to serve these needs are also conducive to coordination. Consensus on all these perceptions is not necessary, but there must be sufficient agreement in some areas for coordination to take place.

Vocational educators and JTPA administrators, for example, often disagree on the value of on-the-job training (Lewis, Ferguson, and Card 1987). Vocational educators feel much of this training is specific to an employer and does little to increase the individual's long-term career potential. JTPA officials, in turn, feel many vocational programs are not responsive to the needs of the labor market and that vocational educators do not emphasize placing their students after they complete their programs. Despite these differences, over half of the JTPA clients assigned to classroom occupational training receive that training in public vocational-technical institutions (Lewis 1988). This level of usage indicated agreement that some JTPA clients can benefit from classroom instruction and that public institutions are appropriate providers for some of this instruction.

In a mail survey of a representative national sample of public postsecondary institutions, administrators were asked to rate six factors that encourage their institutions to provide services to JTPA clients (Lewis 1988). The factor cited most often was "mission of institution consistent with purposes of JTPA." This was rated a major factor by 51 percent of the institutions and a minor factor by 22 percent. The next highest rated factor was "personal relationships among staff of institution and JTPA" which was rated a major factor by 36 percent and a minor factor by 26 percent.

As part of the same study, local JTPA administrators were asked as part of a telephone interview a similar but not identical question. This question was open-ended: "What do you think have been the major factors that have worked to produce or hinder effective coordination between the SDA and the vocational education system?" Earlier in the interview vocational education had been defined as "all public vocational programs including those offered through community colleges."

Open-ended questions do not yield as many responses as questions with fixed alternatives. Nevertheless, the most frequent responses referred to the history or climate of working together in the SDA. This was volunteered by 30 percent of the administrators. Good communication, the second most frequent factor, was mentioned by 16 percent of the administrators.

These figures are put in perspective when the reports of negative factors are considered. The factor most frequently mentioned as hindering coordination, performance-based contracts, was cited by only 6 percent of the administrators. The lack of an emphasis on placement by vocational education was cited by 4 percent and turf concerns by 3 percent. These results stand in sharp contrast to much of the public discussion on vocational education-JTPA relationships.[1]

The concepts and evidence reviewed in this chapter show that while there are basic structural and attitudinal barriers to coordination among public agencies, the very nature of the environment in which they operate also contains facilitating conditions. The next chapter presents examples of some recent attempts to strengthen these facilitating conditions.

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[1]These results, it should be noted, were obtained from interviews conducted by the National Alliance of Business. It seems likely that JTPA administrators would have been more likely to express dissatisfaction with vocational education to interviewers from that organization than they would have been if the interviewers had been associated with a vocational center.

CHAPTER 2

RECENT COORDINATION INITIATIVES

This chapter reviews some recent initiatives by state and local agencies to coordinate their efforts to prepare people for employment. The sources of most of the information about these efforts are personal communications or articles in the Employment and Training Reporter, a weekly newsletter published by Manpower Information, Inc., a division of the Bureau of National Affairs. The articles from this newsletter that are cited are identified in parentheses as "ETR" followed by the date of the issue.

The coordination initiatives reported here can be grouped into three general types. The first involves expanding the responsibility of an agency or council to give it a broader functional role or coordination oversight for state programs that are involved in preparing people for employment. The second arises from welfare reform and is designed to cause the separate agencies responsible for income maintenance, support services, education, and employment and training to focus their efforts on increasing the opportunities for employment of welfare recipients. The third consists of two or more agencies voluntarily combining their resources and expertise to serve particular targeted groups with special needs. Examples of each approach are presented.

Expanded Responsibilities

Methods some states have used to facilitate coordination have been to add new responsibilities to an existing agency, to create a new agency through the merger of existing agencies, and to extend the purview of the state job training coordinating council. The ways in which different states have implemented these approaches are discussed in this section.

Agency Changes

When JTPA was passed, many states assigned administrative responsibility for the act to an office of the state agency that is responsible for the Employment Service. In some states, such as North Dakota, the same office administers both (ETR 10 September 1986). North Dakota has a single, state-wide service delivery area. Job Service offices throughout the state perform all JTPA functions such as intake, assessment, eligibility certification, and preparation and implementation of employment development plans. Regular Job Service staff were trained to serve JTPA-eligible clients and funded from JTPA.

Florida has not integrated its services to this degree, but has prepared a single state plan to satisfy the requirements of both JTPA and the Wagner-Peyser Act, which established the Employment Service (ETR 23 April 1986). The objectives of the single plan, as in most coordination efforts, are to avoid duplication and thereby increase the resources available for services. Florida also has colocation of Job Service and JTPA staff in many of its local offices.

Indiana also filed a single JTPA/Wagner-Peyser plan for Program Years 1986 and 1987 (ETR 25 June 1986). It subsequently passed state legislation that merged the Employment Service with the administrative entity for JTPA. Massachusetts has proposed a similar merger (ETR 24 February 1988). In both of these states the administrative agency will be guided by a board that performs the functions assigned to the state job training coordinating council by JTPA. Included among these functions is a broad oversight responsibility for all "employment and training and vocational education needs throughout the state" [sec. 122 (b)]. This responsibility has been strengthened by state policies that assign jurisdiction over all state employment efforts. In Indiana, Massachusetts, and New Jersey private industry councils (PICs) also have expanded responsibilities to act as local employment boards. Massachusetts actually replaced the PIC with regional employment boards which have responsibility for some education areas, such as adult literacy programs and for recommending the use of funds to modernize vocational education equipment and programs.

State Council Changes

New Jersey and Maine have also broadened the responsibilities of their job training coordinating councils and PICs, but these states have not merged administrative agencies. Governor Kean of New Jersey, in Executive Order No. 188, dated 9 April 1988, established the New Jersey Commission on Employment and Training. This commission incorporates the job training coordinating council mandated by JTPA, but goes beyond that law to require that at least 50 percent of the members be representatives of the private sector. The commission, like the coordinating council, has broad oversight responsibility for all employment and training programs. In the words of the executive order:

> The Commission shall continuously evaluate the programs and activities of the broad employment and training system and make recommendations to the Governor and appropriate departments for improvements. Such recommendations may include organization changes designed to increase effectiveness, reduce duplication, and effect cost savings (section 11).

The commission is also charged to review and make recommendations on all new employment and training programs and substantive changes to existing programs prior to their submission for funding. All new state and federal legislation shall be reviewed and recommendations made on implementation and integration within the existing system. Advisory structures in related fields are to be examined as to their functions and accomplishments. The fields specifically named are vocational education, adult education, apprenticeship, vocational rehabilitation, and human services. The commission is to "make recommendations for more effective coordination of the efforts in these fields and when appropriate a recommendation to the Governor for absorbing such functions under the jurisdiction of the Commission (section 18, emphasis added). Needless to say, the emphasized words give the commission the potential for a very wide purview.

The Maine Human Resource Development Plan is to the knowledge of the present writers the most comprehensive effort of any state to integrate the services of separate agencies. Because this plan represents the most extensive state effort in coordination, a brief review of its development and contents is presented.

The plan began when Governor McKernan announced six goals for the development of Maine's work force. To provide leadership in the accomplishment of these goals, the governor established the Maine Human Resource Development Council. This council assumed the functions of the state job training coordinating council, but its members and responsibilities extended far beyond employment and training programs. Governor McKernan appointed the commissioners of four of the state agencies most involved in human resources to the council as well as leaders from the House and Senate of the Maine Legislature.

The governor assigned the council the responsibility to develop a plan to achieve the six goals he had established. A subcabinet work group set objectives for each of the goals, and the council developed implementation recommendations for each of the objectives. These recommendations were submitted to 15 state agencies which were asked to prepare plans for carrying them out. The council then reviewed the plans developed by the agencies to ensure they maximized opportunities for coordination.

In all, plans were made for achieving 23 objectives. The state education agency, the Department of Educational and Cultural Services (DECS) is the lead agency for achieving three of the objectives under Goal 4: "Develop a strategy for helping youth make the transition from school to work" (HRD Plan, p. 64). These objectives involve increasing the percentage of secondary students who graduate and who attend postsecondary institutions and establishing and testing model school-to-work programs. The DECS plays a supportive role in the attainment of the two other objectives under this goal and for many of the other objectives involving economic development, welfare reduction, retraining, and service to groups with special needs.

The development of such a wide-ranging plan obviously required the involvement of many people. The Executive Summary of the Human Resource Development Plan was published on 1 July 1988 as a separate, nontechnical description of the plan. This publication contains an acknowledgements section that lists the 30 members of the Human Resource Development Council as well as 82 other individuals who contributed to the plan. This many were needed in a relatively low population state (1985 estimate, 1.2 million, U.S. Bureau of the Census 1986). In more populated states with larger human resource budgets and more programs the number of people to be involved and complexity of the process would increase. Nevertheless, Maine has demonstrated that with strong leadership it is possible to develop a plan that sets overall state goals and combines the expertise and resources from several different agencies.

Despite the comprehensiveness of its Human Resource Development Plan, Maine, unlike Florida and Indiana, did not submit a combined JTPA/Wagner-Peyser plan for program years 1988-89. This reflected a policy decision to keep the Employment Service as a neutral labor exchange and not have it too closely identified with JTPA. The Maine Department of Labor did not want the Employment Service to be seen as an advocate for its clients, a role that the basic purpose of JTPA causes its administrative agencies to assume. The JTPA plan (submitted 23 March 1988) incorporates much of the Human Resource plan with a section on specific JTPA requirements added.

Missouri has taken a more locally based approach to increase coordination. The Governor's Coordination and Special Services Plan (GCSSP) for Program Years 1988-89 requires each of the 15 SDAs in the state to develop a plan to link JTPA with other employment, education, and human service agencies in their geographic areas. The plan is to describe how the agencies will minimize duplication of intake, assessment, and referral services through steps such as common forms, transfer of records or co-location of staff.

To strengthen the plan, the GCSSP recommends that each SDA work with educational institutions in its area to develop an education linkage policy. Each SDA is asked to prioritize the educational services it will provide and present a rationale for its ranking. This rationale should specify the populations to be served and the agencies that can provide the services. The state administrative entity for JTPA in Missouri is the Department of Economic Development. This agency is providing financial support and technical assistance to the SDAs in the development of their plans. After the educational linkage policies are submitted by the SDAs (due 1 January 1989), state staff will review them and determine state actions and programs that will facilitate the implementation of the local policies. Where possible, implementation programs will be funded from the JTPA section 123, 8 percent coordination set-aside.

It is too early to tell if these various initiatives will improve effectiveness and minimize duplication of services, but in Indiana, at least they have certainly caused controversy. In Indiana the creation of the Department of Employment and Training Services has brought about two legal challenges (ETR 6 May 1987 and ETR 13 April 1988) by organizations representing staff who had been in the Employment Security Division. The most recent suit contends that the new department has "willfully, knowingly, and intentionally attempted to privatize the administration and regulation of all services, programs, monies, and contracts through the 17 private industry councils in the state by specifically denying such responsibility to state merit departmental personnel" (ETR 13 April 1988, p. 740). At the time this is written, this case has still not been resolved. The first suit was dropped when amendments were added to the state legislation establishing the new department that shielded the former Employment Security staff from layoffs.

Vocational educators were wary about the responsibilities assigned to state job training coordinating councils prior to strengthening of these councils in several states (Lewis, Ferguson, and Card 1987). The expanded roles of these councils will be watched carefully. If education officials do not feel they are full partners on these councils, perceived encroachment on areas that they consider their legitimate areas of authority may be resisted. The establishment of the New Jersey Commission on Employment and Training provides an example of the sensitivities in this area. The executive order establishing this commission carried out recommendations made to Governor Kean by the Task Force on Employment Policy (1987) which he appointed. This task force was made up of the chief administrative officers of six departments of the state government, the chair of the job training coordinating council, and the governor's chief of policy and planning. Despite the stature of this body it felt compelled to tread lightly on the relationship of education to employment and training. In the introduction of its report to the governor, under a heading titled "Clarifications," the task force states:

> Throughout the report, reference is made both to the employment and training system and to the education and training programs within that system. The latter term--education and training--is used because, while education is its own system, many aspects of it are directly related to, and have been conceived in practice for the purpose of, readying people for work. The employment and training system entails the public and private efforts made to help people access meaningful employment. To the extent that particular education programs intentionally and particularly contribute to this function, they have been included in the analyses and recommendations (Task Force on Employment Policy 1987, p. 2).

This quotation demonstrates how carefully state officials proceed when they begin to touch on the relationships between agencies with separate but related missions and constituencies. It is the independence of these agencies, of course, that is a principal source of the duplication of services that coordination is intended to eliminate. Education, however, has a tradition of autonomous governance coupled with strong local control that often removes it from the direct authority of governors. Members of state boards of education and chief state school officers, especially when they are elected, feel they represent the citizens of their states just as much as governors or state legislators. Consequently they subject the coordination initiatives of governors to an independent review from the perspective of the best interests of education. This independence--compounded by the inherent problems of causing change in a large, complex, decentralized system--complicates the process of involving education in coordination efforts.

Welfare Reforms

A national consensus appears to have emerged that welfare recipients who are capable of working should be provided a broad range of services to increase their chances of obtaining employment. Massachusetts with E&T (Employment and Training) choices and California with GAIN (Greater Avenues for Independence) provided models that many other states have adopted. The federal Department of Health and Human Services invited states to submit proposals for waivers on existing regulations so that demonstration employment and training programs could be conducted for some welfare recipients and many responded.

The 100th Congress considered several bills, most prominently HR 1720 and S.1511, the latter frequently referred to as "the Moynihan bill," that incorporated many of the features found in the state programs. From these various bills, the Family Support Act of 1988 (P.L. 100-998) was finally passed. This legislation requires at the federal level that the Secretary of Health and Human Services consults with the Secretaries of Education and Labor on program coordination. At the state level, the governor has the responsibility to ensure coordination. The job training coordinating council assists through its review of state plans. The state welfare agency must also consult with the state department of education and the state agency that administers JTPA.

These requirements reflect the multiple obstacles to employment of many welfare recipients and the need for several separate agencies to work together to provide a full range of services. The GAIN program in California provides a good example of the complexity of coordinating several separate agencies (ETR 4 May 1988). The GAIN program begins with the preparation of a plan by the county welfare office working in cooperation with the county office of education, the area community college, and the PIC. This plan has many of the same elements as the job training plan

required for each service delivery area established under JTPA. It specifies how many eligible clients will be served, the types of services they will receive and likely service providers, and a budget.

Once the plan is drafted there must be a public hearing so those affected by the plan have an opportunity to comment and make suggestions. The plan is revised, if necessary, to incorporate suggestions from the public hearing and submitted to the county board of supervisors for approval. After receiving county approval, the plan is submitted to the Department of Social Services for state approval. The department sends copies to other state agencies involved in GAIN. Each of these agencies reviews the plan to ensure that their local offices have the capacity to provide the services indicated in the plan. The comments from the separate agencies are used by the Department of Social Services which makes the final decision on whether the plan should be approved.

Only after this long planning and review process is completed can actual enrollment and service delivery begin. The time and effort required are obvious and demonstrate that while coordination may be beneficial, or even essential, it is not a free good. Much effort is required to make coordination happen, and the effort required represents a significant barrier to achieving higher levels of coordination. Note also that the lead agency, the Department of Social Services, has final responsibility for the development and approval of each county's plan. This is the agency that will ultimately be accountable for the success or failure of GAIN. While the department is willing to, indeed must, share planning and review responsibilities with cooperating agencies, it retains the final decision-making authority.

The National Commission for Employment Policy has studied whether JTPA performance standards limit services to recipients of Aid to Families with Dependent Children (Rubin and Zornitsky 1988). The overall conclusion of this study is that performance standards are not a major impediment. Instead the welfare and JTPA officials who participated in the study agreed that the most important factors for improving services were increased coordination and better support services.

As welfare agencies become more involved in preparing their clients for employment, coordination will continue to increase in importance. Already some observers are warning that welfare agencies may duplicate services employment and training agencies can provide. At the 1987 annual conference of the National Alliance of Business, Marion Pines received the Alliance's Distinguished Performance Award as the Outstanding Job Training Professional. As part of her award, she led a conference workshop titled "Integrating Planning and Delivery Systems: Who Calls the Shots?" At this workshop Ms. Pines noted the many welfare-to-work initiatives in the states and warned of the potential for the development of a dual system: employment and training for welfare clients and employment and training for JTPA clients. Among

vocational educators who remember the programs conducted under the Manpower Development and Training Act, the words "dual system" have a very familiar ring.

There was another session at the same conference on welfare-to-work programs in three states. Representatives from California, Maryland, and New Jersey described how their states were organizing to provide the range of services needed by welfare recipients. In each of these states local-level plans are approved by groups appointed by the welfare agency. Members of Private Industry Councils (PIC) are either appointed as members of these groups or PICs have the right to review and comment on the plans. In no case, however, has the welfare agency chosen to use the PIC as the approving body. Agencies retain control over decisions essential to their performance. Any proposals to increase coordination must deal with this reality.

Focus on Targeted Groups

State Efforts

The initiatives for increasing coordination discussed to this point have been mandated by the governor or through legislation. Many examples have been reported in ETR of two or more state or local agencies voluntarily combining their resources to provide better services than any one would offer alone. This often happens because the needs of the particular group to which the services are directed extend beyond the normal scope of a single agency. Single parents, especially teenagers, are a frequent target group for coordinated programs.

In New York, for example, the state departments of Social Service and Education combined their resources to create a program for single parents that received a sex equity award from the National Coalition for Women and Girls in Education (ETR 23 December 1987). The two departments each contributed $300,000 to fund 14 local projects. Each local recipient had to match the state funds.

The details of the local programs vary somewhat across sites, but each offers supportive services, assessment, remediation, skill training, and assistance in job placement. Some sites work with their PICs for referrals and job placement. Clients receiving Aid to Families with Dependent Children are the primary focus. The skill training component stresses jobs that pay more than the participants can receive from welfare. In the City of New York that means they must earn at least $7.50 per hour.

Illinois also has a demonstration program directed at teenage parents titled "Teen Single Parent Initiative: Education for Employment" (ETR 24 June 1987). Funding for this program comes primarily from the Perkins Act, but the nine demonstration sites are operated by nonprofit agencies. The Ounce of Prevention

Fund administers six of the sites. This organization is a public/private partnership between the Illinois Department of Children and Family Services and the Pittway Corporation Charity Foundation. Parents Too Soon, Inc., which operates the other three sites, was established by the Illinois Department of Public Health at the direction of Governor Thompson. A third private, nonprofit organization, the Illinois Caucus on Teenage Pregnancy, provides training and technical assistance to the program operators and other agencies and community members cooperating with the nine local sites. As in New York, the actual services vary somewhat across sites, but in each case the vocational education funds enabled the local programs to add education and employment and training services to the health and support services they were already providing. In addition to vocational assessment, counseling and basic skills remediation, participants at different sites may receive instruction to prepare for the General Education Development (GED) test, job readiness classes, experimental employment, skill training provided by the program itself, or referral to other training programs in their local areas.

In addition to establishing a Commission on Employment and Training with broad coordination responsibilities, New Jersey has a number of specific programs that bring together the services of separate agencies to serve targeted populations. The School Based Youth Services Program (SBYSP), which links the education and human services systems, was developed by the New Jersey Department of Human Services. In a memorandum dated 7 May 1987, Drew Altman, the Commissioner of that department, described the program as follows:

> Projects funded through this program will be adapted to meet local needs; no single statewide model will be imposed. Each local project, however, will be expected to provide teenagers with a single entry point for a comprehensive range of services and a core service package. The core services include: employment and training; health screening and referrals; and mental health and family counseling services. Beyond this core set of services, a project may address other local service needs such as economic and social supports to allow teen parents to complete school and outreach for school drop-outs (pp. 4-5).

The eligibility criteria for SBYSP grants are designed to encourage coordination among local agencies. All funded sites had to demonstrate the direct involvement of a "broad local coalition" and all applications were jointly filed by a school district and one or more public or nonprofit agencies. Local advisory boards were also required with membership representing the categories of

services provided by the project. The following members are mandatory:

- a representative of the Private Industry Council;
- a representative of the school board;
- parents of children enrolled in the local schools;
- a teacher recommended by the local teachers association or union;
- teenagers enrolled in a school served by the project, recommended by the student government;
- representation from the nonprofit provider community;
- representation from the family court service system;
- representation from the health and mental health care communities;
- representation from the substance abuse community.

Other eligibility criteria include:

- a written commitment by the administrator and school board that the school wants the center and will work to coordinate and integrate existing school services and activities with the center;
- written support of the application by the local school teachers union; parent/teacher organizations; community organizations, nonprofit agencies providing social services; health, or employment services; and the area Private Industry Council;
- formal agreements to integrate the services of other organizations or agencies with the activities of the project.

When SBYSP was originally announced in May 1987, letters of intent to apply for funding were requested. These letters had to be jointly signed by the superintendent of schools and board of education and the director of a qualified nonprofit or public agency. Over 100 such letters were received and 59 applications were actually submitted. These applications were reviewed at the county level by Human Service Advisory Councils and Youth Service Commissions and at the state level by the Human Services Commissioner's Advisory Committee. On the basis of recommendations from these reviews, 29 projects were funded and are currently in operation. All provide the core services as well as information and referral services and recreational activities. Some projects, at

local option, also provide a 24-hour crisis "hotline," family planning, transportation, and day care.

Other New Jersey initiatives that bring together separate agencies are 10,000 Graduates . . . 10,000 Jobs, the High School Proficiency Test Summer/School Year Supplemental Instruction Program, and the Cooperative Education Linkage Project. Each of these combines the resources and staff expertise of the Department of Education and the Department of Labor to improve services provided to high school students. These programs and other cooperative efforts are described in the publication, Partnerships in Training: Vocational Education-Job Training Partnership Act Annual Report 1986-1987 which is available from the New Jersey Department of Education.

During the summer of 1988, Mississippi conducted a statewide remediation program for young people 16 to 22 years of age who had failed the Mississippi Functional Literacy Test (ETR 13 July 1988). This test must be passed for high school graduation. The program was funded for $4.9 million under JTPA title IIB to serve 3,500 youth and was coordinated by the State Department of Education. A pilot program conducted in 1987 found 80 percent of those who enrolled completed the 8-weeks of instruction. Among the completers, 85 percent increased their skills in reading, writing, and mathematics by the grade equivalent of 8 months of school. Participants are paid a dollar for each hour of class time.

The program uses the Wonder of Learning curriculum developed by the Mississippi Writing/Thinking Consortium for the State Department of Education. This curriculum is based on material of immediate relevance to the students to capture their interest and maximize opportunities for successful performance. The materials were developed by the consortium working with teachers and local directors of the program.

Local Efforts

Examples of locally initiated coordination efforts are often reported in ETR. The 11 May 1988 issue, for example, described programs for single parents and displaced homemakers run by community colleges in Meridian, Tupelo, and Utica, Mississippi. All three programs receive funds from the Perkins Act but rely heavily on relationships with their JTPA offices and other community agencies to serve their clients.

In a rural area of Tennessee several organizations cooperated to retrain copper mine workers displaced by the closing of their mine (ETR 13 May 1987). The Tennessee Valley Authority administered the program which received $400,000 from federal JTPA title III funds and $1.6 million from Tennessee. The full range of employment and training services was made available. Many of these services were provided by area vocational-technical schools and community colleges. One option was a course called Retraining

for Technology which consisted of instruction delivered at the work site after work hours. The course was designed to teach the applied physics and mathematics needed for technical jobs in various industries. The materials for the course were adapted from the Principles of Technology curriculum that had been developed by the Agency for Instructional Technology and the Center for Occupational Research and Development. The development of the Principles of Technology curriculum had, itself, been a cooperative venture supported with funds from vocational education agencies in over 30 states and several Canadian provinces.

Louisiana has programs in several service delivery areas directed to young people who are two or more years behind the normal grade for their age (ETR 6 July 1988). These programs are funded from JTPA title IIA and state and local education sources. The students take intensive remedial instruction for half of the school day and vocational training or regular class for the other half. Low student-teacher ratios and individualized, self-paced instruction using computers are credited with achieving significant increases in performance on standardized achievement tests. The Terrebonne Parish service delivery area requires 76 percent of participants in each school to increase their measured performance one grade level for their school to be funded for another year.

In San Angelo, Texas the school district and local PIC combined funds to actually build and staff a school designed especially for dropouts and potential dropouts (ETR 23 November 1988). The school has the catchy acronym PAYS derived from Preparing Area Youth for Success. The Concho Valley Independent School District paid for the land, the cost of construction and maintenance of the building, utilities, transportation, and supplies. The San Angelo PIC provided funds to cover teachers' salaries and equipment. The school is selective in that applicants must convince the school director that they really want to attend there. Instruction is individualized on an open-entry/ open-exit basis. A strong supportive climate is encouraged through peer interactions, child care, and access to a drug counselor. Most students work part-time, many on try-out employment or in-school work experience provided under JTPA funding.

Although the school just opened in September 1988, it has already graduated three students who had completed most of their graduation requirements before dropping out of their former schools. Other indications of success are the rapid increase in enrollment and waiting list of applicants who want to attend the PAYS School.

Almost every week the Employment and Training Reporter contains an article such as those cited about some type of interagency coordination at the state or local level. While it could be argued that program administrators only publicize their successes, there is some evidence that the programs that receive recognition reflect many more that are not reported. A survey of all SDAs indicated that almost all (97 percent) had some type of

cooperative agreement with public vocational-technical institutions during the 1986 program year (Lewis 1988).

Overall, there appears to be an increased awareness, particularly at the state level, of the need for coordination to improve the effectiveness of services and to increase efficiency by eliminating duplication. At the local level, coordination appears to be a less pressing concern. Local officials coordinate, more or less, as a matter of course. If one agency can provide services needed by another agency at the right price--and if the bureaucratic hurdles are not too high--those services are likely to be used. State-level coordination appears to help local-level coordination primarily by lowering the height, and sometimes even eliminating, the hurdles.

CHAPTER 3

COORDINATION GUIDELINES

This chapter presents guidelines that agency representatives can follow if they wish to initiate or improve their level of coordination with other actors in their problem domain. These guidelines are drawn from three main sources: (1) the data gathered for the two annual reports on joint planning and coordination prepared by the National Center at The Ohio State University, (2) the review of recent coordination initiatives presented in chapter 2 of this report, and (3) selected articles that examine coordination from the perspective of organizational theory. The guidelines represent what appear to be the best practices reflected in these sources. As such, they should be regarded as working hypotheses rather than firmly established principles.

These guidelines assume that the actors in a problem domain recognize that the problems in their domain exceed the capacity of any single agency to deal with them by itself. If this assessment is not shared by at least two of the actors, there will be little interest in working with other agencies. To simplify the presentation, only two parties are discussed. The guidelines are also applicable to relationships involving more than two parties.

Guideline 1: Someone must take the lead.

Given the constraints and threats associated with coordination, it is easy to see why it does not just happen. At least one actor (individual, group, and/or organization) in a problem domain must anticipate that the benefits likely to result from coordination exceed the costs required to bring it about. That actor must then take the initiative to establish contact and begin to explore areas of mutual interest with potential collaborators.

The more the initiating party is perceived as a legitimate actor in the problem domain, the greater the chance that coordination can be initiated (Gray 1985). Perceived legitimacy may arise from diverse origins: activities within the domain, special knowledge or skills, control of resources, past leadership, and statutory authority are among the primary sources. In the development of the Maine Human Resource Development Plan, the governor was the initiator. His elected position as chief executive officer accorded him full legitimacy as the convenor of the agencies which had primary responsibility for the development of the plan.

In New Jersey the Department of Human Services acted as initiator to draw school districts, family courts, health and mental health agencies, and nonprofit providers together in the School Based Youth Services Program. The department was able to do so by being a significant actor in the problem domain and by

making substantial resources available as an incentive for coordination.

Guideline 2: There must be mutual benefits for the cooperating parties.

One of the basics of human relationships is reciprocity. In virtually all types of interactions, some type of exchange or quid pro quo is involved (Homans 1961). Such exchanges appear even more important for interagency relationships than for interpersonal ones. Because of the effort required to coordinate and the risks involved for each, there must be clear expectations of the benefits each is likely to receive. Written agreements, contracts, or memoranda of understanding, are often used to state explicitly the responsibilities of each party.

The nature of the benefits for each cooperating party can best be determined by an analysis of their relative strengths and weaknesses. The exchange of resources or services is determined by how the activities of the separate agencies complement each other. The skill training needs of many JTPA clients provide the basis for the JTPA-vocational education relationships. JTPA clients receive training that increases their opportunities for employment; educational institutions carry out their mission to provide such training and often receive JTPA funds either as tuition or for the actual costs of training. Both receive the social approval of complying with the prevailing norms that encourage coordination as reflecting efficient usage of public funds.

In addition to working with vocational education to provide skill training, many SDAs contract with high schools for youth competency programs (General Accounting Office 1987). These programs primarily stress pre-employment/work maturity skills and typically enroll in-school youth who are potential dropouts and deficient in basic skills. These programs are attractive to SDAs for they deal with potential problems at an early stage, they help to satisfy the requirement for 40 percent expenditures on youth, and attainment of competencies can be reported as a positive termination under the youth performance standards. The JTPA funding enables high schools to provide extra services to students who are having difficulty with the standard curriculum.

Because vocational education is the training provider, the flow of funds is predominantly from JTPA to education. Some JTPA administrators who were interviewed during data collection for the National Center's first annual report on coordination complained about this one-way flow of funds. Over half (57 percent) of the Perkins funds are directed to population groups with barriers to employment. A greater portion of these funds directed to programs also supported by JTPA would strengthen the sense of reciprocity that is so important to coordination.

Guideline 3: Mutual accommodation is almost always necessary.

The separate actors in a problem domain operate under different legislation, funding, governance, and administrative structures. Typically, both parties must make some adjustments in order to work together. When a coordinated effort is being planned, an attempt should be made to anticipate the type and extent of adjustments that will be necessary and their likely costs. If these estimates are not made, the cooperating parties may be dissatisfied with their relationship because its benefits are outweighed by its costs.

Guideline 4: To the extent possible, all those to be involved in coordinated activities should participate in planning the activities.

This guideline simply repeats one of the basic findings of group dynamics research. In their benchmark synthesis of research on human behavior, Berelson and Steiner (1964) summarized hundreds of small group studies in the following manner:

> Active discussion by a small group to determine goals, to choose methods of work, to reshape operations, or to solve other problems is more effective in changing group practice than is separate instruction of the individual members, external requests, or the imposition of new practices by superior authority--more effective, that is, in bringing about better motivation and support for the change and better implementation and productivity of the new practice (p. 353).

Far less research has been done on interorganizational relations. Nevertheless, the principle that involvement in the decision-making process leads to acceptance and support for the decisions reached appears very sound. The discussion of the preparation of the Maine Human Resource Development Plan noted that 112 people were acknowledged as contributing to the plan. Most of these individuals participated in small work groups as representatives of the agencies that would implement the plan. Governor Kean's creation of the New Jersey Commission on Employment and Training followed the recommendations of a task force he had appointed. This task force was made up of the commissioners of five state departments, the chair of the job training coordinating council, the chancellor of higher education, and the governor's chief of policy and planning. Obviously both governors had followed this guideline in initiating major new attempts at improving coordination.

Guideline 5: Communicate, communicate, communicate.

There is an old saying in real estate that the three most important factors to consider in a buying decision are location, location, and location. In coordination the same could be said about communication. When agency administrators are asked the factors that have encouraged coordination in the past, or what could be done to encourage it in the future, communication is almost always mentioned. (Lewis, Ferguson, and Card 1987; Lewis 1988).

There is, of course, an element of tautology in this guideline. Coordination, by the definition used in this report, cannot occur without joint knowledge, which requires communication. The guideline is not entirely tautological, however. Two parties may communicate well, but never move beyond this level to identify shared goals and how each can contribute to the attainment of these goals.

If coordination is not occurring, communication provides a way to start. Indeed, it is the way to start. As guideline 1 states, "Someone must take the lead." Operationally this means one actor in a problem domain must initiate or increase communication with another actor.

In the vocational education-JTPA relationship, several opportunities for communication are mandated in the separate federal laws. The most significant is the set-aside of 8 percent of JTPA title IIA funding (section 123) to provide services and facilitate coordination through cooperative agreements. The negotiation of these agreements requires communication. Other opportunities are provided in the review by JTPA representatives of state plans for vocational education (Perkins section 114) and local applications for funds (Perkins section 115) and in the evaluation of the adequacy and effectiveness of coordination by state councils on vocational education [Perkins section 112 (d)].

The state and local level surveys conducted for the first two annual reports on coordination prepared by the National Center at The Ohio State University indicated that for the most part the opportunities for communication presented by these legislative mandates are not being fully realized. At present, more positive results are being achieved by having a member of the job training coordinating council as a member of the state council on vocational education [Perkins section 112 (2)] and a vocational educator as a member of a PIC [JTPA section 102 (a)].

These findings again reinforce the importance of individual relationships that appear to underlie much of coordination. If such relationships do not exist, increased communication is a basic first step to establishing them.

Guideline 6: Fulfill commitments.

After all the work that goes into developing a cooperative agreement, it is essential that commitments be honored. If a relationship is to continue, the parties involved must perceive it as worthwhile, equitable, and productive (Van de Ven 1976). For both parties to assess their relationship in this manner, each must obtain what they expected to obtain from their coordinated activities. If either side does not fulfill the others expectations, it becomes much more difficult to re-establish a relationship.

The site visits for the first annual report found a few instances where the local JTPA officials had been disappointed by the performance of public vocational institutions. These disappointments usually involved job placements. In one large city, for example, the public schools had entered into a performance-based contract to train JTPA clients in heating and air conditioning repair and to place them at a specified wage rate. The schools were unable to place the contracted number at the wage specified and consequently did not receive full payment. The school representative said some of the trainees refused to take jobs that were offered to them, and the school could not force them to do so. The school board was forced to absorb the difference between the cost of providing the training and the payment they received from the SDA. Following this experience, the school board refused to submit a proposal for a performance-based contract and the SDA refused to consider the board's proposals for cost-reimbursable contracts.

When commitments are not carried out, the mutual benefits that the cooperating parties anticipated are not realized, and the basis for their coordination nullified. Parties planning coordinated activities, should examine carefully the commitments they are making to be sure there is a realistic probability of success. As mentioned earlier, there should be a written agreement explicitly stating the responsibilities of each party. If there is a strong chance either party will not be able to fulfill its responsibilities, the activities should not be undertaken. In coordination the old adage "try, try again" should be rephrased to read, "If at first you don't succeed, you probably won't get another chance."

There is nothing in this list of suggestions that is likely to surprise any administrator who has attempted to work with another agency. Nor is there anything that is likely to make coordination easier. In most cases working with another agency will remain inherently more difficult than operating programs independently. Nevertheless, in those conditions where coordination offers the potential of improving services and reducing costs, these guidelines provide an approach that can be followed to determine if these potentials can be realized.

APPENDIX

ATTEMPTS TOWARD A STATISTICAL MODEL OF COORDINATION

Data on the status of coordination between vocational education and Job Training Partnership Act (JTPA) programs at the state and local levels were presented in the first two annual reports prepared by the National Center. Those data indicated that there was considerable coordination between vocational education and JTPA; however, only major descriptive findings were presented due to time constraints. In this chapter, based on the same data, a formal model which attempts to describe the causal relationships of vocational education-JTPA coordination process is constructed and tested. The statistical method used is structural equation modeling which allows the use of nonexperiment data to determine the validity of theoretical models and to test causal models that involve both observable and unobservable (latent) variables.

This appendix is organized into four sections. The first section presents a causal model that summarizes the factors postulated to influence the coordination process. The second section discusses how the data collected for the first two annual reports were selected and reformatted into the components of the causal model. The third section briefly describes the method of the structural equation modeling. The final section summarizes the results of the testing of the structural equation model of the vocational education-JTPA coordination process.

A Causal Model

According to the findings from the two annual reports, the level of coordination achieved in a given SDA is determined primarily by the history of relationships between vocational education and employment and training agencies in that area and the personal relationships among the people who must work together. If both of these are favorable they encourage communication which can yield agreement on the problems and solutions to these problems. If such agreement is reached, shared goals can be identified or established. Such goals typically require accommodation on both sides. If the necessary accommodations are made and commitments carried out, the relationships are likely to continue. Relationships among the state agencies responsible for administering programs under the two acts influence the local level by their own history of working together, or not, and by their role in facilitating communications.

A causal model as shown in figure 2 summarizes the factors that are postulated to influence the vocational education-JTPA coordination process. The model contains two exogenous (independent) latent variables and seven endogenous (dependent) latent

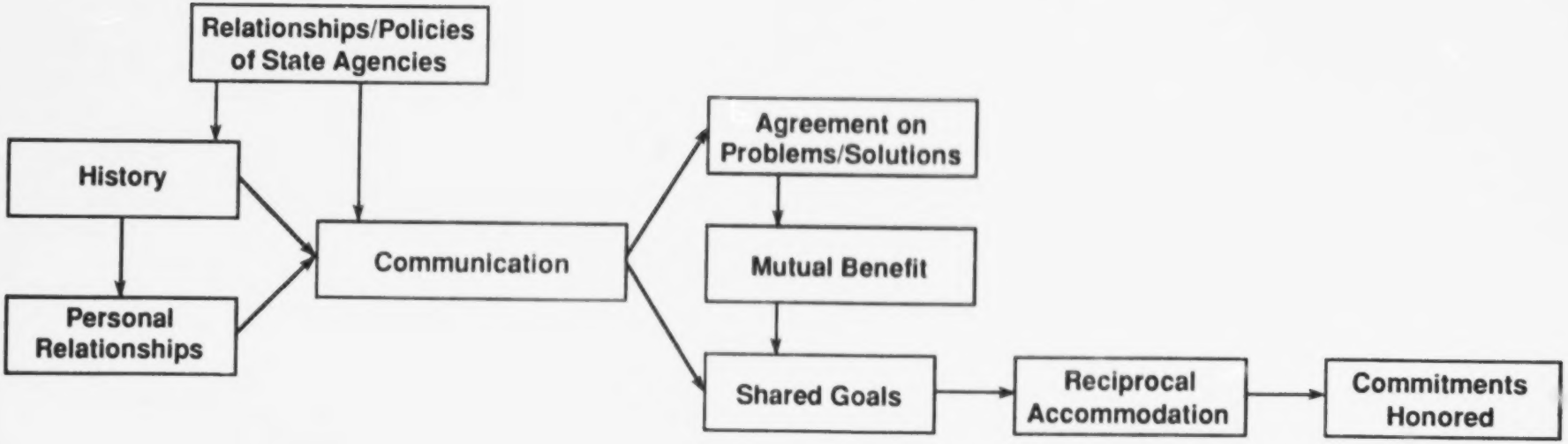

Figure 2. Hypothesized model of the vocational education and JTPA coordination process

variables. It is hypothesized in the model that the independent variables Relationships/Policies of State Agencies and History and Personal Relationships affect the dependent variable Communication. The dependent variable Communication in turn affects the dependent variables Agreement on Problems and Solutions, Shared Goals, Reciprocal Accommodation, and Commitments Honored. In addition, there is a relationship between the independent variables Relationships/Policies of State Agencies and History and Personal Relationships.

It should be noted that the variables and relationships in the proposed model were derived after the original data were collected. The model is an attempt to test in a fairly rigorous manner relationships that appeared to be present in the data. The model, however, was not used in the preparation of the original data collection instruments. Consequently, in many cases, the derived measures in the model are rather poor proxies of the variables of interest.

Instruments

This section reviews those surveys conducted for the two annual reports and describes the indicators used to measure each of the eight latent variables postulated in the structural model presented in figure 2. The review of those surveys goes from the state level to the local level questionnaires.

Reviewing Questionnaires

The data regarding the coordination process of vocational education-JTPA at the state level were collected by mail and telephone surveys of 41 states and through site visits to 9 more states. Information obtained from the mail questionnaires, which were sent to the state agencies responsible for vocational education and JTPA, is focused primarily on the methods used to improve the state-level coordination between vocational education and JTPA, the implementation of the provisions in the two acts, the factors encouraging and discouraging coordination and perceived benefits resulting from coordination. Answers from the telephone interviews with the directors of the administrative agencies for vocational education and JTPA and the chairpersons of the state councils established by the Perkins Act and JTPA provide information about how much emphasis their governor places on vocational education-JTPA coordination, the rating of current level of coordination, the major factors hindering or producing effective coordination and the personal relationships between the key officials of vocational education and JTPA.

The data collected for examining the local level coordination consist of telephone interviews with the directors of the administrative entities for 590 JTPA service delivery areas and mail

questionnaires from 509 postsecondary institutions offering occupational education. Information obtained from these surveys includes the perceptions of SDA administrators regarding their relationships with vocational education, the factors that influence these relationships, the history of cooperation and working together between SDA and vocational education, involvement of postsecondary institutions in terms of the types of services provided to JTPA clients, the number of clients served, and the amount of JTPA funding received.

Components of Each Latent Variable

To test the causal model presented in figure 2, not all questions asked in each questionnaire are relevant to the components of the model. Therefore, only some of the questions that are related to the model were selected. The following section describes which questions were chosen as indicators of each latent variable. The discussion of the indicators proceeds according to the order of the latent variables in the model from left to right: the independent variables Relationship and Policies of State Agencies, and History and Personal Relationship; then the dependent variables Communication, Agreement on Problems and Solutions, Shared Goals, Reciprocal Accommodation, and Commitments Honored.

Relationship and Policies of State Agencies (RPSA). Based on the study of the first annual report, factors influencing coordination at the state level include the leadership of governor in each state, interest of key officials to further coordination, staff assigned to coordinate with vocational education and JTPA and personal relationships among major administrators of vocational education and JPTA.

Accordingly, the first indicator used to assess Relationship and Policies of State Agencies is a measure of the governor's Leadership (PSA1) regarding coordination. This measure contains four items from the state-level telephone surveys asking the respondents how much emphasis their governors placed on coordination between state agencies. (The same question was asked of the two state directors of the administrative agencies and of the chairpersons of the two councils in each state.) Each item was scored from 1 (for no emphasis or direction provided) to 5 (for very strong emphasis). The four items were then summed to obtain an overall score of the governor's leadership pertaining to coordination, yielding a possible range of 4 to 20, higher scores indicating more emphasis placed. A few of the potential respondents were not interviewed in which case the mean of the other respondents from that state was used.

The second indicator used to assess Relationship and Policies of State Agencies is a six-item measure of the Interest of Key Officials (PSA2) from all state-level mail and telephone surveys regarding the interest of the directors of vocational education

and JTPA and chairpersons of state councils for vocational education and JTPA in increasing coordination between respective agencies. Each item was scored as follows: very interested, a score of 4 was assigned; somewhat interested, 3; slightly interested, 2; and not interested at all, 1. The items were summed to yield a total score, ranging from 6 to 24, higher scores indicating the key officials were much more interested in increasing coordination.

The third indicator used to assess Relationship and Policies of State Agencies is a two-item measure of Staff Assigned (PSA3) from the state-level surveys regarding the number of staff assigned and the time they spent to coordinate vocational education with JTPA, or vice versa. Each item was calculated by multiplying the number of staff assigned by the estimated time they spent on coordination activities. Scores were assigned according to the resulting magnitude of each item from 1 (if less than 10) to 4 (if greater than 40). The total score obtained by summing the scores from the two items ranged from 2 to 8, higher scores indicating more staff assigned and time spent for coordination.

The fourth indicator used to assess Relationship and Policies of State Agencies was a measure of Relationship among Key Officials (PSA4). Two sets of questions were selected from the state-level telephone surveys. The first set asked about the personal relationship between the state directors of vocational education and JTPA and the relationship between them prior to coming to their present positions. The second set asked how frequently the chairpersons of the state councils for vocational education and JTPA talked with the state directors of vocational education and JTPA, and how frequently they had contact with each other.

The questions regarding the personal relationships between the state directors of vocational education and JPTA were scored from 1 to 5, with 5 representing personal friends, close friends or both personal friends and professional acquaintenances, and 1 neither personal friends nor professional acquaintances. Thus, a subtotal score ranging from 2 to 10 was obtained by summing the answers from the two directors. For their relationships prior to coming to present positions, each of the two items was scored from 1 (no previous interaction) to 4 (had previous interaction and worked together closely), yielding a subtotal score ranging from 2 to 8.

For questions on the frequencies with which the chairpersons of the state councils for vocational education and JTPA talked with the state directors of each system and with each other, each of the items was scored as follows: Frequency of every week or more was assigned a value of 5; one or two times a month, 4; five or six times a year, 3; three or four times a year, 2; one or two times a year, 1; and zero was assigned to zero frequency. Summing the six items yielded a subtotal score ranging from 6 to 30. Then, the three subtotal scores were summed to get an overall score of the relationship among key officials, yielding a possible

range of 10 to 48, higher scores indicating closer personal relationship and more frequent contacts among key officials.

Indicators used to assess the latent variables that represent the local-level coordination between vocational education and JTPA were selected as follows.

History and Personal Relationship (HPR). Two indicators were used to assess the local-level latent variable History and Personal Relationship. The first indicator, a single question concerning the major factors which have worked to produce effective coordination between the SDA and the vocational education system, was a measure of History and Climate in SDA (HPR1). Responses indicating a history of good relationship, or personality and leadership of key officials, were assigned a value of 1, otherwise, 0 was assigned.

The second indicator, a single question asking about whether there was a history of cooperation and working together between the service delivery areas and public vocational/technical programs since JTPA's implementation, was a measure of History of Cooperation and Working (HPR2). It was scored from 0 to 3 (good, long history), higher scores indicating better or longer history of cooperation or working together since JTPA's implementation.

Communication (COM). Two indicators were used to assess local-level communication. The first indicator, a measure of Existence of Communication (COM1), was similar to the first one of History and Personal Relationship. If responses to the question were good communication, regular meetings, increasing understanding, no duplication, then a score of 1 was assigned; otherwise, 0 was assigned.

The second indicator used to assess Communication was a measure of Programs Informed (COM2). The measure was a single question regarding whether the SDA had been provided with a list of all vocational education programs operating in the SDA and its usefulness. The item was scored in the following manner: yes, a value of 2 was assigned; no, 0; If the answer was yes and the list of programs was used for referrals, to avoid duplication, for information, REPs and funding, or any two or more uses, a value of 1 was added. Thus, a total score could range from 0 to 3, higher scores indicating a list of programs had been provided and was useful.

Agreements on Problems and Solutions (APS). The indicator used to assess Agreements on Problems and Solutions was a measure of Collaborative Efforts (APS). The item, regarding the collaborative efforts of the SDAs with public vocational educational institutions, was scored as 2, if they had either financial or nonfinancial or both agreements; and 0, no contact at all.

Shared Goals (SGO). The indicator (SGO) used to assess Shared Goals at the local level was again similar to the first one of History and Personal Relationship. The item was scored in the following manner: shared goals or mutual need was assigned a value of 1; for other answers 0 was assigned.

Reciprocal Accommodation (RAC). Four indicators were used to assess Reciprocal Accommodation. The first indicator was a measure of Joint Planning Sessions or Discussions (RAC1). The item, regarding whether the SDAs conducted any joint planning sessions or discussions with those in the vocational education system, was chosen. If the responses to the question were yes, 1 was assigned; if no, 0. If yes and specific examples of increased coordination as a result of joint planning or discussions or general statements that coordination improved were indicated, a value of 2 was added; and if yes but little or no impact on coordination, 1 was added. A total score obtained from this scheme ranges from 0 to 3, higher scores indicating joint planning sessions or discussions conducted and fostered coordination.

The second indicator, the number of representatives from vocational education institutions on the SDA's private industry council, was a measure of Presence from Vocational Education (RAC2). The item was scored the same as the total number (from 0 to 9) of vocational education representatives reported on the council. If the presence of these representatives contributed to better coordination, a value of 3 was added; if only limited effect resulted, 2 was added; and no effect because already had good coordination, 1 was added. The total thus obtained ranges from 0 to 12, higher scores indicating more representatives that brought about better coordination.

The third indicator used to assess Reciprocal Accommodation was a measure of Presence from Postsecondary Institutions (RAC3). The item, regarding whether postsecondary institutions were formally represented on the Private Industry Councils for their JTPA service delivery area, was scored as 1 if the answer was yes and zero for no. Postsecondary institutions formally represented on a regional or area vocational education planning committee caused a value of 1 to be added. Furthermore, if representatives of the JTPA service delivery areas attended meetings of this planning committee, 1 was again added. A total score from this scoring scheme ranges from 0 to 3, higher scores indicating more meetings attended by postsecondary institutions.

Commitment Honored (COMH). Six indicators were used to assess the local-level latent variable Commitment Honored. The first indicator, regarding the percentage of the SDA's title IIA money contracted to the public vocational educational system, was a measure of Title IIA Money Contracted to Vocational Education (COMH1). The item was firstly computed by dividing the actual amount of the SDA's title IIA money contracted to public vocational education by its total title IIA expenditure during program year 1985. Then the item was scored as follows: less than 10

percent, 1 was assigned; between 10 to 20 percent, 2; between 20 to 30 percent, 3; between 30 to 40 percent, 4; and more than 40 percent, 5.

The second indicator was a measure of Clients Trained by Vocational Education (COMH2) regarding the percentage of title IIA clients received classroom training in public vocational educational institutions. The item was firstly computed by dividing the SDA's title IIA clients who received training in public vocational educational institutions by the total amount of the title IIA clients served in the SDA. Then the item was scored in the following manner: less than 20 percent, a value of 1 was assigned; 20 to 39 percent, 2; 40 to 59, 3; 60 to 79, 4; 80 or more, 5.

The third indicator used to assess Commitment Honored was a measure of JTPA Funding of Postsecondary Institutions (COMH3) regarding the percentage of fund in terms to the total budget postsecondary institutions received from JPTA. After dividing the money from JTPA by the postsecondary institution's total operating budget for the 1986-1987 school year, each item was scored in a similar way as the first indicator of Commitment Honored from 1 (less than 10 percent) to 5 (greater than 40 percent).

The fourth indicator was a measure of JTPA Clients Enrolled in Postsecondary Institutions (COMH4). After an initial score was obtained by summing the number of JTPA clients who were enrolled in special class-sized occupational training programs conducted only for JTPA clients, in regular occupational programs on an individual referral basis and in basic/remedial education or GED programs, it was rescored to get an final score as follows: less than 20, a value of 1 was assigned; greater than 20 but less than 40, 2; greater than 40 but less than 60, 3; greater than 60 but less than 80, 4; greater than 80, 5.

The fifth indicator was an eight-item measure of Services Provided under JTPA (COMH5) regarding services provided by postsecondary institutions under JTPA. Each item representing one type of services, such as "acts as the administrative for SDA," "conducts intake, assessment, counseling and referral," "certifies eligibility for JPTA assistance" and so on, was scored as 1 (if providing that service) or 0 (if not providing that service). A total score ranging from 0 to 8 was obtained by summing all the eight items. Higher scores again were presumably indicative of more services provided by postsecondary institutions under JTPA.

The sixth indicator used to assess Commitment Honored was a measure of Current Level of Coordination (COMH6) asking the respondents about the nature of the relationship between the SDA and public/technical programs. The item was scored from 0 (poor, bad, on nonexistent relationship) to 5 (excellent, very good, or superb relationship).

Structural Equation Modeling

Structural equation modeling can be implemented by the computer program LISREL VI, which was developed by Karl Joreskog and Dag Sorbom for fitting models to sample data and has become the standard statistical computer program in this field. The structural equation model itself consists of two parts: (1) a measurement model containing two equations, which specify the relationships between endogenous latent variables and observed variables or "indicators" and between exogenous latent variables and observed variables; and (2) a structural model which specifies the relationships between the exogenous latent variables and endogenous latent variables. When the sample data are transformed into covariance matrix or correlation matrix equations, the model can be analyzed using the LISREL VI to examine the fit of the model to the population from which a sample has been drawn. In addition, the structural component of the model may be examined separately from the measurement component. It was expected that the application of structural equation modeling would contribute to an understanding of the factors underlying the vocational education-JTPA coordination process.

A structural equation model always begins with a path diagram representing the hypothesized relationships under investigation. Figure 3 presents the path diagram of the full structural equation model of the vocational education-JTPA coordination process being tested. It basically looks the same as figure 2 except that the measurement model and all parameters are incorporated. Several conventions employing a notational system of Greek letters are followed in drawing the path diagram in figure 3. All latent variables, which cannot be measured directly, are represented by circles; all measured variables or indicators, which are observable and served as approximations of the latent variables, are represented by rectangles. Exogenous latent variables are denoted by Ξ; endogenous latent variables are denoted by η. The effects of endogenous on endogenous latent variables are denoted by β coefficients; the effects of exogenous latent variables on endogenous latent variables are denoted by γ coefficients. The regression coefficient relating each indicator to its unobservable counterpart is denoted by λ. The correlations between exogenous latent variables are denoted by π. Errors in the measurement of exogenous variables are denoted by δ; errors in the measurement of endogenouse variables are denoted by ϕ. The error term for each equation, which relates a set of exogenous and endogenous measured variables to an endogenous latent variable, is denoted by ζ. All of the relationships or parameters can be converted into a series of regression equations and parameters matrices. These equations and matrices were employed in the LISREL VI program to compute estimates of the population parameters of the hypothesized model and several measures of goodness-of-fit of the model to the sample data, such as chi-square statistic, Goodness-of-Fit Index, Root Mean Square Residual, Squared Multiple Correlations and the Coefficients of Determination. The next section describes the

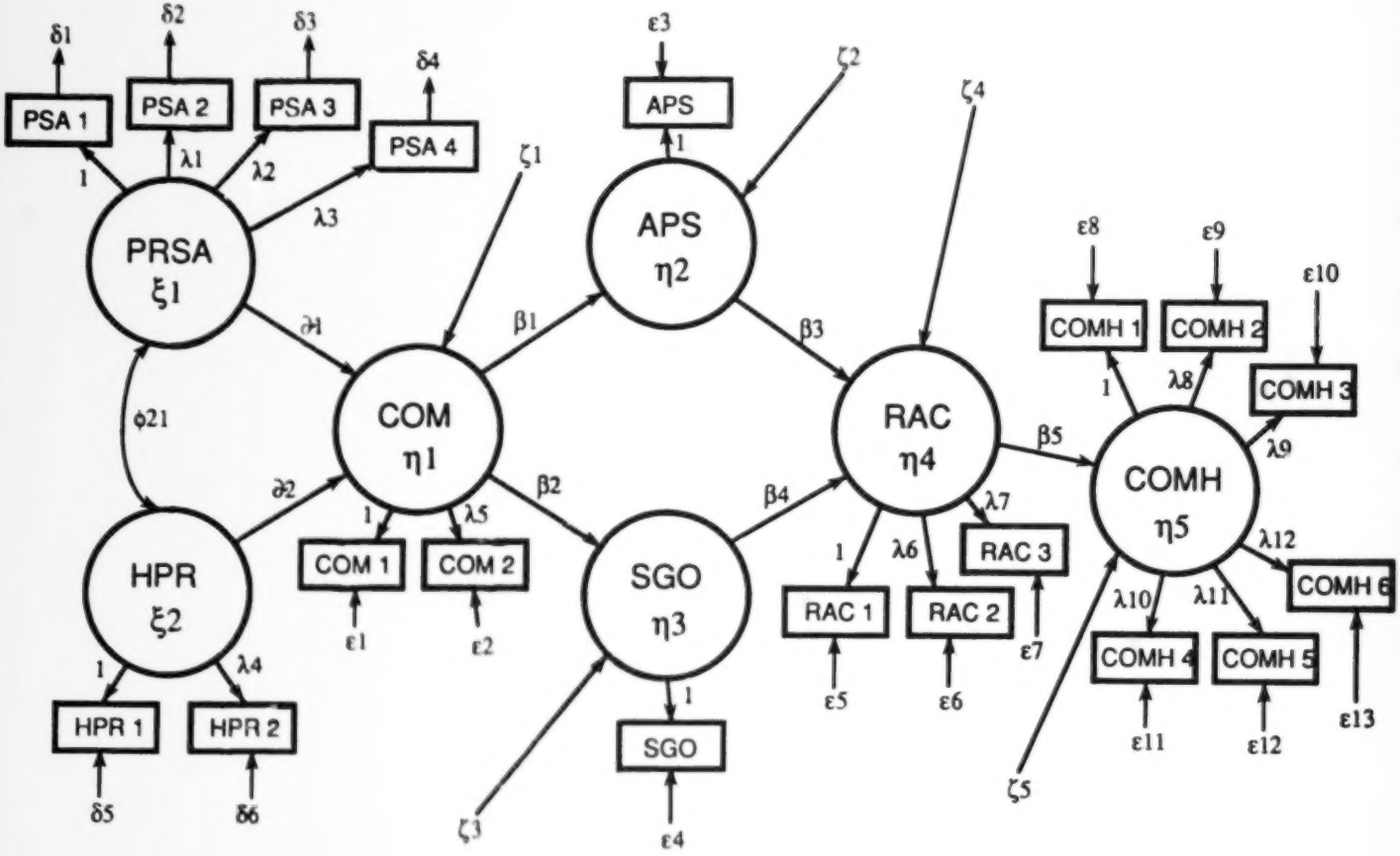

Figure 3. A complete structural equation model of the vocational education-JTPA coordination process

Figure 3--Continued

Symbol Key:

Independent Variables:

PRSA = Relationship/Policies of State Agencies
- PSA1 = Leadership (X1)
- PSA2 = Interest of Key Officials (X2)
- PSA3 = Staff Assigned (X3)
- PSA4 = Relationship among Key Officials (X4)

HPR = History and Personal Relationship
- HPR1 = History and Climate in SDA (X5)
- HPR2 = History of Cooperation/Working Together (X6)

Dependent Variables:

COM = Communication
- COM1 = Exitence of Communication (Y1)
- COM2 = Programs Informed (Y2)

APS = Agreements on Problems/Solutions
- APS = Collaborative Efforts (Y3)

SGO = Shared Goals
- SGO = Shared Goals (Y4)

RAC = Reciprocal Accommodation
- RAC1 = Joint Planning Sessions/Discussions (Y5)
- RAC2 = Presence from Vocational Education (Y6)
- RAC3 = Presence from Postsecondary Institutions (Y7)

COMH = Commitment Honored
- COMH1 = Title IIA Money Contracted to Vocational Education (Y8)
- COMH2 = Clients Trained by Vocational Education (Y9)
- COMH3 = JTPA Funding of Postsecondary Institutions (Y10)
- COMH4 = JTPA Clients Enrolled in Postsecondary Institutions (Y11)
- COMH5 = Services Provided under JTPA (Y12)
- COMH6 = Current Level of Coordination (Y13)

results of testing the causal model of the coordination process between vocational education and JTPA.

Results of Testing the Structural Equation

Following a summary of descriptive statistics regarding the indicators, whose derivation was presented in the second section of this appendix, this section discusses the results of testing the hypothesized model with the reformatted data.

Descriptive Statistics

Table 2 presents the means and standard deviations (SD) of the variables selected as indicators in the structural equation model of the vocational education-JTPA coordination process. The reformatting of some of the variables yielded relatively low mean scores and relatively high standard deviations (indicating large variability in the scores obtained). These low scores often resulted from the general convention followed in reformatting the variables: in most cases missing data were considered to reflect a lack of vocational education-JTPA contact and were assigned low scores. For example, postsecondary institutions show a tendency for not attending many of the meetings, such as Private Industry Councils for their JTPA service delivery areas and regional or area vocational education planning committee, which in the model were used as indicators of Reciprocal Accommodation. In addition, the percentage of the JTPA fund received by postsecondary institutions was less than 10 percent of their total budgets. Thus, the mean scores of indicators Services Provided under JTPA by Postsecondary Institutions and JTPA Clients Enrolled in Postsecondary Institutions both turn out to be rather low.

In summary, the reformatted data tend to reflect a lower level of cooperation and working together between service delivery areas and public vocational/technical programs than the original data from which they were derived. The merging of the data from several sources and the decision to consider missing data as reflecting no contact appear to be the major contributors to these results.

Testing the Model

Table 3 and table 4 present the correlation matrices of the state-level and local-level variables used in the causal model of vocational education-JTPA coordination process respectively. By grouping the state-level and local-level variables together, table 5 presents the correlation matrix across levels.

Attempts to fit the sample data with the model presented in figure 3 were unsuccessful. In LISREL VI, estimations of the parameters in the model are obtained by a maximum likelihood (ML)

TABLE 2

MEANS AND STANDARD DEVIATIONS OF VARIABLES USED AS INDICATORS IN THE STRUCTURAL EQUATION MODEL OF VOCATIONAL EDUCATION-JTPA COORDINATION PROCESS

Latent Variable and Indicator	N	Mean	SD	Minimum Obtained Score	Maximum Obtained Score
Relationship/Policies of State Agencies (PRSA)					
Leadership (PSA1)	46	13.19	3.07	7.00	20.00
Interest of Key Officials (PSA2)	46	18.92	3.33	9.00	24.00
Staff Assigned (PSA3)	46	2.47	1.20	2.00	6.00
Relationship among Key Officials (PSA4)	46	25.00	5.55	12.00	38.00
History and Personal Relatioship (HPR)					
History and Climate in SDA (HPR1)	548	0.18	0.38	0.00	1.00
History of Cooperation/Working Together (HPR2)	548	0.98	1.35	0.00	3.00
Communication (COM)					
Existence of Communication (COM1)	548	0.38	0.49	0.00	1.00
Programs Informed (COM2)	548	2.14	1.22	0.00	3.00
Agreements on Problems/Solutions (APS)					
Collaborative Efforts (APS)	548	1.91	0.43	0.00	2.00
Shared Goals (SGO)					
Shared Goals (SGO)	548	0.12	0.32	0.00	1.00

Table 2--Continued

Latent Variable and Indicator	N	Mean	SD	Minimum Obtained Score	Maximum Obtained Score
Reciprocal Accommodation (RAC)					
Joint Planning Sessions/ Discussions (RAC1)	548	1.74	1.30	0.00	3.00
Presence from Vocational Education (RAC2)	536	4.08	1.68	0.00	10.00
Presence from Postsecondary Institutions (RAC3)	548	0.39	0.93	0.00	3.00
Commitment Honored (COMH)					
Title IIA Money Contracted to Vocational Educaion (COMH1)	548	2.64	1.34	1.00	5.00
Clients Trained by Vocational Educaiton (COMH2)	548	2.14	1.10	1.00	5.00
JTPA Funding of Postsecondary Institutions (COMH3)	548	1.03	0.29	1.00	5.00
JTPA Clients Enrolled in Postsecondary Institutions (COMH4)	548	1.81	1.57	1.00	5.00
Services Provided under JTPA (COMH5)	548	0.46	1.34	0.00	8.00
Current Level of Coordination (COMH6)	548	3.69	1.31	0.00	5.00

TABLE 3

PEARSON PRODUCT-MOMENT CORRELATION AMONG STATE-LEVEL VARIABLES USED IN THE STRUCTURAL EQUATION MODEL OF VOCATIONAL EDUCATION-JTPA COORDINATION PROCESS

	PSA1	PSA2	PSA3	PSA4
Leadership (PSA1)	1.000			
Interest of Key Officials (PSA2)	0.392	1.000		
Staff Assigned (PSA3)	0.116	-0.192	1.000	
Relationship among Key Officials (PSA4)	0.262	0.345	0.109	1.000

TABLE 4

PEARSON PRODUCT-MOMENT CORRELATION AMONG LOCAL-LEVEL VARIABLES USED IN THE STRUCTURAL EQUATION MODEL OF VOCATIONAL EDUCATION-JTPA COORDINATION PROCESS

	HPR1	HPR2	COM1	COM2	APS	SGO	RAC1	RAC2	RAC3	COMH1	COMH2	COMH3	COMH4	COMH5	COMH6
HPR1	1.00														
HPR2	0.12	1.00													
COM1	-0.37	-0.14	1.00												
COM2	0.09	0.07	-0.16	1.00											
APS	0.10	0.12	-0.00	0.19	1.00										
SGO	-0.16	-0.03	-0.30	0.09	0.06	1.00									
RAC1	0.07	0.10	-0.11	0.18	0.24	0.12	1.00								
RAC2	0.03	0.03	-0.10	0.03	0.07	0.06	0.08	1.00							
RAC3	-0.00	0.02	-0.06	-0.08	-0.08	-0.05	0.02	0.01	1.00						
COMH1	0.04	0.10	-0.05	0.02	0.13	0.13	0.12	0.01	0.03	1.00					
COMH2	0.06	0.03	-0.08	0.10	0.13	0.04	0.13	0.11	0.06	0.33	1.00				
COMH3	0.02	0.02	-0.06	-0.02	0.02	0.02	0.00	0.06	0.16	-0.02	0.01	1.00			
COMH4	0.01	-0.03	-0.06	-0.10	-0.17	-0.09	-0.02	0.04	0.67	-0.05	0.03	0.15	1.00		
COMH5	0.05	-0.02	-0.09	-0.06	-0.03	-0.05	0.05	-0.02	0.63	-0.04	0.02	0.10	0.57	1.00	
COMH6	0.18	0.30	-0.27	0.23	0.41	0.12	0.32	0.13	-0.08	0.09	0.15	0.02	-0.15	-0.05	1.00

TABLE 5

PEARSON PRODUCT-MOMENT CORRELATIONS OF ACROSS-LEVEL VARIABLES
USED IN THE STRUCTURAL EQUATION MODEL OF VOCATIONAL
EDUCATION-JTPA COORDINATION PROCESS

	HPR1	HPR2	COM1	COM2	APS	SGO	RAC1	RAC2	RAC3	COMH1	COMH2	COMH3	COMH4	COMH5	COMH6	PSA1	PSA2	PSA3	PSA4
HPR1	1.00																		
HPR2	0.11	1.00																	
COM1	-0.36	-0.14	1.00																
COM2	0.07	0.08	-0.12	1.00															
APS	0.10	0.12	-0.04	0.21	1.00														
SGO	-0.17	-0.02	-0.29	0.08	0.08	1.00													
RAC1	0.07	0.11	-0.11	0.19	0.25	0.12	1.00												
RAC2	0.05	0.02	-0.11	0.05	0.08	0.06	0.11	1.00											
RAC3	-0.00	0.02	-0.05	-0.13	-0.08	-0.05	0.02	0.02	1.00										
COMH1	0.04	0.11	-0.06	0.03	0.12	0.14	0.14	0.11	0.02	1.00									
COMH2	0.08	0.03	-0.08	0.12	0.12	0.05	0.15	0.05	0.04	0.33	1.00								
COMH3	0.02	0.01	-0.05	-0.03	0.02	-0.03	-0.01	0.05	0.17	-0.02	0.03	1.00							
COMH4	0.00	-0.05	-0.06	-0.13	-0.17	-0.09	-0.04	0.04	0.68	-0.04	0.03	0.14	1.00						
COMH5	0.04	-0.05	-0.06	-0.07	-0.01	-0.05	0.04	-0.03	0.63	-0.03	0.02	0.09	0.57	1.00					
COMH6	0.17	0.28	-0.28	0.22	0.41	0.13	0.33	0.14	-0.08	0.08	0.13	0.01	-0.17	-0.06	1.00				
PSA1	-0.03	0.02	0.00	-0.08	-0.05	0.01	-0.08	-0.10	-0.01	-0.02	-0.02	0.00	0.01	-0.02	-0.06	1.00			
PSA2	0.00	-0.01	-0.07	0.05	-0.01	0.16	0.06	0.06	-0.04	0.12	0.04	0.06	0.00	0.02	-0.06	0.33	1.00		
PSA3	-0.02	-0.05	0.12	-0.05	0.06	-0.04	-0.01	-0.07	0.01	-0.10	-0.07	0.05	-0.03	-0.02	0.04	0.17	-0.20	1.00	
PSA4	-0.08	-0.08	0.12	0.04	0.04	0.00	-0.03	-0.01	-0.02	0.06	0.06	0.00	-0.03	0.01	-0.01	0.23	0.29	0.25	1.00

or unweighted least squared (ULS) iterative procedure. This procedure minimizes a certain fitting function by consecutively improving the parameters estimates starting with the initial estimates. After computing initial estimates, the program terminates if it fails to improve the initial estimates within 250 iterations, indicating problems with the model or the sample data or both (Joreskog and Sorbom, 1985). The initial estimates of the model produced by the LISREL VI are presented in table 6. The initial estimates are only tentative estimates of the population parameters, even the initial estimates may be very close to the final estimates, they are not sufficient to compute the chi-square statistic, Goodness-of-Fit Index (GFI), Root-Mean-Square residual (RMR), t-values, and other important information for evaluating the overall model and further modifying the model. The initial model in figure 3 could be modified on the basis of the overall correlations among measured variables as shown in table 5, the initial estimates in table 6, and the Squared Multiple Correlations and Coefficients of Determination computed by LISREL VI.

Although modifications can be made on the initial model, it should be noted again that the data used to test the causal model of the vocational education-JTPA coordination process were obtained by reformatting the six state-level and two local-level surveys. All of these were conducted for specific purposes related to the two annual reports, not for building the causal model attempted in this report. Consequently, some important measures relevant to the model could not be adequately derived from these questionnaires. Although all questions in the two local-level questionnaires were carefully reviewed and reformatted for the model, the measured variables or indicators selected for the local-level endogenous and exogenous latent variables were found to be inadequate and caused the LISREL VI program to stop repeatedly while attempting to modify the initial model.

In the local-level questionnaires, for instance, it was difficult to find an independent measure for the latent variable Shared Goals. The measure for Shared Goals is actually a dummy variable derived from the same question as indicators Existence of Communication and History and Climate in SDA by assigning value of one or zero to different responses. Since very few respondents gave multiple answers to the same question, a positive code of one for Shared Goals usually resulted in negative codes of zero on the other indicators.

Clearly, neither the model nor the data used to test it adequately reflected the complexity of the coordination process. A better specification and cleaner data may have yielded a model with acceptable statistical parameters. Even if such a model had been obtained, however, it is likely it would have been a poor representation of the complexity of the process itself.

TABLE 6

INITIAL PARAMETER ESTIMATES FOR THE STRUCTURAL EQUATION MODEL OF THE VOCATIONAL EDUCATION-JTPA COORDINATION PROCESS COMPUTED BY THE LISREL VI PROGRAM

Lamda Y

	COM	APS	SGO	RAC	COMH
COM1	0.752				
COM2	-0.861				
APS		1.000[a]			
SGO			1.000		
RAC1				1.000	
RAC2				0.963	
RAC3				-0.022	
COMH1					1.000
COMH2					0.507
COMH3					0.020
COMH4					0.006
COMH5					-0.021
COMH6					0.464

Lambda X

	PRSA	HPR
PSA1	1.113	
PSA2	1.470	
PSA3	0.274	
PSA4	5.230	
HPR1		0.553
HPR2		1.805

Beta

	COM	APS	SGO	RAC	COMH
Eq. 1					
Eq. 2	0.008				
Eq. 3		0.000			
Eq. 4		0.000	0.000		
Eq. 5				0.000	

Table 6--Continued

Gamma

	PRSA	HPR
Eq. 1	0.019	0.266
Eq. 2		
Eq. 3		
Eq. 4		
Eq. 5		

Phi

	PRSA	HPR
PRSA	1.000	
HPR	-0.105	1.000

Theta Epsilon

COM1	0.026
COM2	0.193
APS	0.024
SGO	0.014
RAC1	0.228
RAC2	0.419
RAC3	0.117
COMH1	0.240
COMH2	0.164
COMH3	0.011
COMH4	0.332
COMH5	0.240
COMH6	0.230

Theta Delta

PSA1	1.110
PSA2	1.355
PSA3	0.189
PSA4	2.455
HPR1	-0.061
HPR2	-0.754

[a]Values of 1.000 in the Lambda matrices are set to fix all indicators of a latent vaiable into the same numerical scale to make the loadings more interpretable.

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